WEST Search History

Hide Items | Restore | Clear | Cancel

DATE: Monday, May 24, 2004

Hide?	Set Name	Query	Hit Count
		DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; THES=ASSIGNEE; PLUR=YES; OP=ADJ	
☐	L9	(formic acid or formated) adj10 metabolizing host cell	0
☐	L8	methanol metabolizing host cell	0
☐	L7	methan metabolizing host cell	0
☐	L6	methane metabolizing host cell	0
☐	L5	c1 metabolizing host cell	7
☐	L4	methylomonas and cyclic terpene	2
☐	L3	methylomonas and monoterpene	2
		DB=PGPB; THES=ASSIGNEE; PLUR=YES; OP=ADJ	
☐	L2	L1	0
		DB=USPT,USOC,EPAB,JPAB,DWPI; THES=ASSIGNEE; PLUR=YES; OP=ADJ	
☐	L1	methylomonas same monoterpene	0

END OF SEARCH HISTORY

Hit List

Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs | Generate OACS

Search Results - Record(s) 1 through 7 of 7 returned.

☐ 1. Document ID: US 20040077068 A1

Using default format because multiple data bases are involved.

L5: Entry 1 of 7 File: PGPB Apr 22, 2004

PGPUB-DOCUMENT-NUMBER: 20040077068
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040077068 A1

TITLE: Carotenoid production from a single carbon substrate

PUBLICATION-DATE: April 22, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Brzostowicz, Patricia C.	West Chester	PA	US	
Cheng, Qiong	Wilmington	DE	US	
Dicosimo, Deana J.	Rockland	DE	US	
Koffas, Mattheos	Williamsville	NY	US	
Miller, Edward S.	Wilmington	DE	US	
Odom, James Martin	Kennett Square	PA	US	
Picataggio, Stephen K.	Wilmington	DE	US	
Rouviere, Pierre E.	Wilmington	DE	US	

US-CL-CURRENT: 435/252.3

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. De

☐ 2. Document ID: US 20040072311 A1

L5: Entry 2 of 7 File: PGPB Apr 15, 2004

PGPUB-DOCUMENT-NUMBER: 20040072311
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040072311 A1

TITLE: Production of cyclic terpenoids

PUBLICATION-DATE: April 15, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Dicosimo, Deana J.	Rockland	DE	US	
Koffas, Mattheos	Wilmington	DE	US	
Wang, Siqun	Wilmington	DE	US	

US-CL-CURRENT: 435/155; 435/166

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 3. Document ID: US 20030182687 A1

L5: Entry 3 of 7 File: PGPB Sep 25, 2003

PGPUB-DOCUMENT-NUMBER: 20030182687
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030182687 A1

TITLE: Functionalization of carotenoid compounds

PUBLICATION-DATE: September 25, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Cheng, Qiong	Wilmington	DE	US	
Norton, Kelley C.	Avondale	PA	US	
Tao, Luan	Claymont	DE	US	

US-CL-CURRENT: 800/282; 435/193, 435/252.3, 435/254.2, 435/320.1, 435/419, 435/6, 435/67, 435/69.1, 536/23.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 4. Document ID: US 20030003528 A1

L5: Entry 4 of 7 File: PGPB Jan 2, 2003

PGPUB-DOCUMENT-NUMBER: 20030003528
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030003528 A1

TITLE: Carotenoid production from a single carbon substrate

PUBLICATION-DATE: January 2, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Brzostowicz, Patricia C.	West Chester	PA	US	
Cheng, Qiong	Wilmington	DE	US	
Dicosimo, Deana	Rockland	DE	US	
Koffas, Mattheos	Wilmington	DE	US	

Miller, Edward S.	Wilmington	DE	US
Odom, James M.	Kennett Square	PA	US
Picataggio, Stephen K.	Landenberg	PA	US
Rouviere, Pierre E.	Wilmington	DE	US

US-CL-CURRENT: 435/67; 435/252.3

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 5. Document ID: US 20020142408 A1

L5: Entry 5 of 7 File: PGPB Oct 3, 2002

PGPUB-DOCUMENT-NUMBER: 20020142408
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020142408 A1

TITLE: Production of cyclic terpenoids

PUBLICATION-DATE: October 3, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
DiCosimo, Deana J.	Rockland	DE	US	
Koffas, Mattheos	Wilmington	DE	US	
Odom, James M.	Kennett Square	PA	US	
Wang, Siqun	Wilmington	DE	US	

US-CL-CURRENT: 435/148; 435/166

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 6. Document ID: US 20040072311 A1, WO 200220815 A2, AU 200188477 A, US 20020142408 A1, NO 200300960 A, EP 1313841 A2, NO 200300343 A, NO 200300830 A, NO 200300831 A, KR 2003034160 A, KR 2003034166 A

L5: Entry 6 of 7 File: DWPI Apr 15, 2004

DERWENT-ACC-NO: 2002-339805
DERWENT-WEEK: 200426

TITLE: Producing cyclic terpenoids, e.g. monoterpenes, which are useful in the fragrance or pharmaceutical industry, by employing a transformed methanotrophic bacterium that metabolize single carbon substrates as a sole carbon source

INVENTOR: DICOSIMO, D J; KOFFAS, M ; WANG, S ; BRZOSTOWICZ, P C ; CHENG, Q ; MILLER, E S ; ODOM, J M ; PICATAGGIO, S K ; ROUVIERE, P E ; NORTON, K C ; SCHENZLE, A ; TOMB, J ; DISOCIMO, D J

PRIORITY-DATA: 2000US-229907P (September 1, 2000), 2000US-229858P (September 1, 2000), 2001US-0938956 (August 24, 2001), 2003US-0363278 (February 27, 2003)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 20040072311 A1	April 15, 2004		000	C12P007/02
WO 200220815 A2	March 14, 2002	E	063	C12P007/02
AU 200188477 A	March 22, 2002		000	C12P007/02
US 20020142408 A1	October 3, 2002		000	C12P007/26
NO 200300960 A	April 9, 2003		000	C12P000/00
EP 1313841 A2	May 28, 2003	E	000	C12N009/10
NO 200300343 A	April 3, 2003		000	C12P000/00
NO 200300830 A	April 30, 2003		000	C12N000/00
NO 200300831 A	April 30, 2003		000	C12N001/20
KR 2003034160 A	May 1, 2003		000	C12P023/00
KR 2003034166 A	May 1, 2003		000	C12N001/20

INT-CL (IPC): A23 K 1/00; C12 N 0/00; C12 N 1/20; C12 N 9/10; C12 N 9/88; C12 P 0/00; C12 P 5/00; C12 P 7/02; C12 P 7/26 ; C12 P 7:02; C12 P 23/00; C12 R 1:26; C12 R 1:26; C12 P 7/02

ABSTRACTED-PUB-NO: US20020142408A
BASIC-ABSTRACT:

NOVELTY - Novel method of producing a monoterpene comprises contacting a transformed C1 metabolizing host cell with a C1 carbon substrate so that a monoterpene compound is produced.

DETAILED DESCRIPTION - The method comprises:

(a) providing a transformed C1 metabolizing host cell comprising:

(i) suitable levels of geranyl pyrophosphate; and

(ii) at least one isolated nucleic acid molecule encoding a cyclic terpene synthase under the control of regulatory sequences; and

(b) contacting the host cell under suitable conditions with a C1 carbon substrate where a monoterpene is produced.

USE - The method us useful for producing cyclic terpenoids, particularly monoterpenes, from geranyl pyrophosphate. Monoterpenes may be used in the flavor and fragrance industry, as well as in the pharmaceutical industry.
ABSTRACTED-PUB-NO:

WO 200220815A EQUIVALENT-ABSTRACTS:

NOVELTY - Novel method of producing a monoterpene comprises contacting a transformed C1 metabolizing host cell with a C1 carbon substrate so that a monoterpene compound is produced.

DETAILED DESCRIPTION - The method comprises:

(a) providing a transformed C1 metabolizing host cell comprising:

(i) suitable levels of geranyl pyrophosphate; and

(ii) at least one isolated nucleic acid molecule encoding a cyclic terpene synthase under the control of regulatory sequences; and

(b) contacting the host cell under suitable conditions with a C1 carbon substrate where a monoterpene is produced.

USE - The method us useful for producing cyclic terpenoids, particularly monoterpenes, from geranyl pyrophosphate. Monoterpenes may be used in the flavor and fragrance industry, as well as in the pharmaceutical industry.

☐ 7. Document ID: US 20040077068 A1, WO 200218617 A2, AU 200188699 A, US 20030003528 A1, EP 1328639 A2

L5: Entry 7 of 7 File: DWPI Apr 22, 2004

DERWENT-ACC-NO: 2002-351711
DERWENT-WEEK: 200428

TITLE: Producing carotenoid compounds e.g. antheraxanthin and astaxanthin, by using microorganisms having a nucleic acid molecule encoding enzymes in the carotenoid biosynthetic pathway and which metabolize single carbon substrates

INVENTOR: BRZOSTOWICZ, P C; CHENG, Q ; DICOSIMO, D J ; KOFFAS, M ; MILLER, E S ; ODOM, J M ; PICATAGGIO, S K ; ROUVIERE, P E ; DICOSIMO, D

PRIORITY-DATA: 2000US-229907P (September 1, 2000), 2000US-229858P (September 1, 2000), 2001US-0941947 (August 29, 2001), 2003US-0363567 (September 4, 2003)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 20040077068 A1	April 22, 2004		000	C12N001/20
WO 200218617 A2	March 7, 2002	E	156	C12P023/00
AU 200188699 A	March 13, 2002		000	C12P023/00
US 20030003528 A1	January 2, 2003		000	C12P023/00
EP 1328639 A2	July 23, 2003	E	000	C12N015/31

INT-CL (IPC): C12 N 1/20; C12 N 1/21; C12 N 15/31; C12 P 23/00

ABSTRACTED-PUB-NO: WO 200218617A
BASIC-ABSTRACT:

NOVELTY - Producing (M) a carotenoid compound, comprising providing a transformed C1 metabolizing host cell, comprising suitable levels of isopentenyl pyrophosphate and a nucleic acid molecule encoding an enzyme in the carotenoid biosynthetic pathway, under the control of regulatory sequences, and contacting the host cell with C1 carbon substrate to produce a carotenoid compound, is new.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for over-production (M1) of a carotenoid in a transformed C1 metabolizing host cell, comprising suitable levels of isopentenyl pyrophosphate and a nucleic acid molecule encoding

an enzyme in the carotenoid biosynthetic pathway, under the control of regulatory sequences, and contacting the host cell with C1 carbon substrate to produce a carotenoid compound.

USE - The method is useful for producing carotenoid compounds such as antheraxanthin, adonixanthin, astaxanthin, canthaxanthin, capsorubrin, beta -cryptoxanthin, alpha -carotene, beta -carotene, epsilon -carotene, echinenone, gamma -carotene, zeta-carotene, alpha -cryptoxanthin, diatoxanthin, 7,8-didehydroastaxanthin, fucoxanthin, fucoxanthinol, isorenieratene, lactucaxanthin, lutein, lycopene, neoxanthin, neurosporene, hydroxyneurosporene, peridinin, phytoene, rhodopin, rhodopin glucoside, siphonaxanthin, spheroidene, spheroidenone, spirilloxanthin, uriolide, uriolide acetate, violaxanthin, zeaxanthin- beta -diglucoside and zeaxanthin (claimed). The carotenoids have potent anti-oxidant properties useful in diet, and aquaculture elements. The carotenoids are also useful as intermediates in the synthesis of steroids, flavors and fragrances and compounds for potential electro-optic applications.

Terms	Documents
c1 metabolizing host cell	7

```
=> file .nash

=> s methylomomas and monoterpene
L1            0 FILE MEDLINE
L2            0 FILE CAPLUS
L3            0 FILE SCISEARCH
L4            0 FILE LIFESCI
L5            0 FILE BIOSIS
L6            0 FILE EMBASE

TOTAL FOR ALL FILES
L7            0 METHYLOMOMAS AND MONOTERPENE

=> s methylomomas
TOTAL FOR ALL FILES
L14           1 METHYLOMOMAS

=> d ibib abs

L14  ANSWER 1 OF 1  LIFESCI    COPYRIGHT 2004 CSA on STN
ACCESSION NUMBER:   87:58164  LIFESCI
TITLE:              Isolation of mutants of the obligate methanotroph
                    Methylomonas albus  defective in growth on methane.
AUTHOR:             McPheat, W.L.; Mann, N.H.; Dalton, H.
CORPORATE SOURCE:   Dep. Biol. Sci., Univ. Warwick, Coventry CV4 7AL, UK
SOURCE:             ARCH. MICROBIOL., (1987) vol. 148, no. 1, pp. 40-43.
DOCUMENT TYPE:      Journal
FILE SEGMENT:       J
LANGUAGE:           English
SUMMARY LANGUAGE:   English
AB   A strain of Methylomonas albus  BG8WM, a type 1 obligate methanotroph,
     which had been maintained for 2 years by serial passage on solid medium
     containing methanol as a carbon source was found to mutate at a frequency
     of 10 super(-5)-10 super(-6) to resistance to dichloromethane (DCM
     super(R)), the parental strain BG8 did not give rise to DCM super(8)
     colonies. DCM super(R) strains were no longer capable of growth on methane
     as a carbon source and exhibited greatly reduced or undetectable methane
     mono-oxygenase activity. The mutants fell into three groups on the basis
     of SDS-PAGE analysis of the polypeptide profiles of the particulate
     fraction of cell extract. One or more of four polypeptides of Mr 70,000,
     50,000, 25,000 and 23,000 were implicated as being components of the
     methane mono-oxygenase.

=> s methanotroph and monoterpene
L22           1 FILE MEDLINE
L23           2 FILE CAPLUS
L24           4 FILE SCISEARCH
L25           2 FILE LIFESCI
L26           3 FILE BIOSIS
L27           2 FILE EMBASE

TOTAL FOR ALL FILES
L28          14 METHANOTROPH AND MONOTERPENE

=> dup rem l28
PROCESSING COMPLETED FOR L28
L29           5 DUP REM L28 (9 DUPLICATES REMOVED)

=> d ibib abs

L29  ANSWER 1 OF 5  BIOSIS  COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER:   2003:544901  BIOSIS
DOCUMENT NUMBER:    PREV200300546407
TITLE:              Effect of monoterpenes on TCE biodegradation by
                    methanotrophic bacteria: Implications for phytoremediation.
AUTHOR(S):          Pacheco, A. [Reprint Author]; Lindner, A. S. [Reprint
                    Author]
CORPORATE SOURCE:   University of Florida, Gainesville, FL, USA
SOURCE:             Abstracts of the General Meeting of the American Society
                    for Microbiology, (2003) Vol. 103, pp. Q-021.
```

http://www.asmusa.org/mtgsrc/generalmeeting.htm. cd-rom.
Meeting Info.: 103rd American Society for Microbiology General Meeting. Washington, DC, USA. May 18-22, 2003.
American Society for Microbiology.
ISSN: 1060-2011 (ISSN print).
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 19 Nov 2003
Last Updated on STN: 19 Nov 2003

AB Trichloroethylene (TCE) degradation has been observed in in situ phytoremediation systems to be more rapid in the rhizosphere of plants. This microenvironment, where stable sources of oxygen and methane are present, may support activity of methane-oxidizing bacteria, previously shown to be capable of co-oxidizing TCE. Field studies at the Savannah River Laboratory (Aiken, S.C.) have shown successful removal of TCE from aquifers by **methanotrophs** populating the rhizosphere of loblolly pine trees; however, a significant question exists as to the effects of **monoterpenes**, released by these trees, on the ability of methanotrophic bacteria to degrade TCE. This research focused on the determination of the interactions between (+)-alpha-pinene, an abundant **monoterpene** in nature, and TCE during methanotrophic oxidation. Measurements of oxygen uptake, as a potential indicator of microbial activity in the presence of TCE and (+)-alpha-pinene, were performed with representatives of Type I, II, and X **methanotrophs**. Initial results from oxygen uptake analysis showed that (+)-alpha-pinene was significantly oxidized by these **methanotrophs**, and its presence in mixtures of these pure cultures of **methanotrophs** with TCE resulted in increased rates of oxygen uptake. This potential synergistic effect between TCE and (+)-alpha-pinene will be subject of future work, which will concentrate on a combined laboratory-field approach to increase our understanding of these potential interactions in the field.

=> d ibib abs 2-5

L29 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 1
ACCESSION NUMBER: 2000:840993 CAPLUS
DOCUMENT NUMBER: 134:46471
TITLE: Stability and detection of .alpha.-pinene oxide in aqueous culture medium
AUTHOR(S): Kajihara, Kimberly K.; Amaral, John A.; Toia, Robert F.
CORPORATE SOURCE: Department of Biology, University of San Francisco, San Francisco, CA, 94117-1080, USA
SOURCE: Environmental Toxicology and Chemistry (2000), 19(9), 2235-2238
CODEN: ETOCDK; ISSN: 0730-7268
PUBLISHER: SETAC Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Methane consumption by methanotrophic bacteria was previously shown to be temporarily inhibited by .alpha.-pinene. Based on literature considerations, loss of inhibition may be due to bacterial degrdn. of the **monoterpene** to .alpha.-pinene oxide, an anticipated metabolite. However, since .alpha.-pinene oxide is unstable in aq. media, detection of its prodn. by **methanotrophs** or other bacteria is problematic. We used gas chromatog.-mass spectrometry anal. to study the chem. breakdown of .alpha.-pinene oxide in various buffer systems (tris(hydroxymethyl)aminomethane, 3-(N-morpholino)propanesulfonic acid, phosphate; pH 7-9) suitable for bacterial whole-cell and cell-free expts. In every case, aq. phase .alpha.-pinene oxide was unstable and its disappearance was accompanied by the appearance of five decompn. products in a characteristic fingerprint that was in part buffer dependent. However, this fingerprint was adequately stable in phosphate buffer such that its appearance could be used to infer the intermediacy of .alpha.-pinene oxide if produced by the bacteria at or near their optimal pH.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 3 OF 5 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 2000:353145 SCISEARCH
THE GENUINE ARTICLE: 310BC
TITLE: Molecular analyses of novel methanotrophic communities in forest soil that oxidize atmospheric methane
AUTHOR: Henckel T; Jackel U; Schnell S; Conrad R (Reprint)
CORPORATE SOURCE: MAX PLANCK INST TERR MIKROBIOL, KARL VON FRISCH STR, D-35043 MARBURG, GERMANY (Reprint); MAX PLANCK INST TERR MIKROBIOL, D-35043 MARBURG, GERMANY
COUNTRY OF AUTHOR: GERMANY
SOURCE: APPLIED AND ENVIRONMENTAL MICROBIOLOGY, (MAY 2000) Vol. 66, No. 5, pp. 1801-1808.
Publisher: AMER SOC MICROBIOLOGY, 1752 N ST NW, WASHINGTON, DC 20036-2904.
ISSN: 0099-2240.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE; AGRI
LANGUAGE: English
REFERENCE COUNT: 38
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Forest and other upland soils are important sinks for atmospheric CH4, consuming 20 to 60 Tg of CH4 per year. Consumption of atmospheric CH4 by soil is a microbiological process. However, little is known about the methanotrophic bacterial community in forest soils. We measured vertical profiles of atmospheric CH4 oxidation rates in a German forest soil and characterized the methanotrophic populations by PCR and denaturing gradient gel electrophoresis (DGGF) with primer sets targeting the pmoA gene, coding for the cu subunit of the particulate methane monooxygenase, and the small-subunit rRNA gene (SSU rDNA) of all life. The forest soil was a sink for atmospheric CH4 in situ and in vitro at all times. In winter, atmospheric CH4 was oxidized in a well-defined subsurface soil layer (6 to 14 cm deep), whereas in summer, the complete soil core was active (0 cm to 26 cm deep). The content of total extractable DNA was about 10-fold higher in summer than in winter. It decreased with soil depth (0 to 28 cm deep) from about 40 to 1 mu g DNA per g (dry weight) of soil. The PCR product concentration of SSU rDNA of all life was constant both in winter and in summer. However, the PCR product concentration of pmoA changed with depth and season. pmoA was detected only in soil layers with active CH4 oxidation, i.e., 6 to 16 cm deep in winter and throughout the soil core in summer. The same methanotrophic populations were present in winter and summer. Layers with high CH4 consumption rates also exhibited more bands of pmoA in DGGE, indicating that high CH4 oxidation activity was positively correlated with the number of methanotrophic populations present. The pmoA sequences derived from excised DGGE bands were only distantly related to those of known **methanotrophs**, indicating the existence of unknown **methanotrophs** involved in atmospheric CH4 consumption.

L29 ANSWER 4 OF 5 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 1998:330863 SCISEARCH
THE GENUINE ARTICLE: ZJ858
TITLE: Inhibition of methane consumption in forest soils by **monoterpenes**
AUTHOR: Amaral J A (Reprint); Knowles R
CORPORATE SOURCE: UNIV SAN FRANCISCO, DEPT BIOL, 2130 FULTON ST, SAN FRANCISCO, CA 94117 (Reprint); MCGILL UNIV, DEPT NAT RESOURCES SCI, ST ANNE BELLEVUE, PQ, CANADA
COUNTRY OF AUTHOR: USA; CANADA
SOURCE: JOURNAL OF CHEMICAL ECOLOGY, (APR 1998) Vol. 24, No. 4, pp. 723-734.
Publisher: PLENUM PUBL CORP, 233 SPRING ST, NEW YORK, NY 10013.
ISSN: 0098-0331.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: AGRI
LANGUAGE: English
REFERENCE COUNT: 27
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Selected **monoterpenes** were tested for their ability to inhibit atmospheric methane consumption by three forest soils from different vegetation types and by the cultured methanotrophic strain,

Methylosinus trichosporium OB3b. Subsurface soil from coniferous (Pinus bunksiana), deciduous (Populus tremuloides), and mixed hardwood (Tsuga canadensis and Prunus pensylvanica) stands was used under field-moist (bulk and intact cores) and slurry conditions. Most of the hydrocarbon **monoterpenes** tested significantly inhibited (40-100%) methane consumption by soils at environmentally relevant levels, with (-)-alpha-pinene being the most effective. With the exception of beta-myrcene, **monoterpenes** also strongly inhibited methane oxidation by Methylosinus trichosporium OB3b. Carbon dioxide production was stimulated in all of the soils by the **monoterpenes** tested. In one case, methane production was stimulated by (-)-alpha-pinene in an intact, aerobic core. Oxide and alcohol monoterpenoids stimulated methane production. Thus, **monoterpenes** appear to be potentially important regulators of methane consumption and carbon metabolism in forest soils.

L29 ANSWER 5 OF 5 MEDLINE on STN DUPLICATE 2
ACCESSION NUMBER: 1998125663 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9464387
TITLE: Effect of selected **monoterpenes** on methane oxidation, denitrification, and aerobic metabolism by bacteria in pure culture.
COMMENT: Erratum in: Appl Environ Microbiol 1998 Sep;64(9):3546
AUTHOR: Amaral J A; Ekins A; Richards S R; Knowles R
CORPORATE SOURCE: Department of Natural Resource Sciences, McGill University, Ste. Anne-de-Bellevue, Quebec, Canada.. amaral@usfca.edu
SOURCE: Applied and environmental microbiology, (1998 Feb) 64 (2) 520-5.
Journal code: 7605801. ISSN: 0099-2240.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199802
ENTRY DATE: Entered STN: 19980306
Last Updated on STN: 20000303
Entered Medline: 19980226

AB Selected **monoterpenes** inhibited methane oxidation by **methanotrophs** (Methylosinus trichosporium OB3b, Methylobacter luteus), denitrification by environmental isolates, and aerobic metabolism by several heterotrophic pure cultures. Inhibition occurred to various extents and was transient. Complete inhibition of methane oxidation by Methylosinus trichosporium OB3b with 1.1 mM (-)-alpha-pinene lasted for more than 2 days with a culture of optical density of 0.05 before activity resumed. Inhibition was greater under conditions under which particulate methane monooxygenase was expressed. No apparent consumption or conversion of **monoterpenes** by **methanotrophs** was detected by gas chromatography, and the reason that transient inhibition occurs is not clear. Aerobic metabolism by several heterotrophs was much less sensitive than methanotrophy was; Escherichia coli (optical density, 0.01), for example, was not affected by up to 7.3 mM (-)-alpha-pinene. The degree of inhibition was **monoterpene** and species dependent. Denitrification by isolates from a polluted sediment was not inhibited by 3.7 mM (-)-alpha-pinene, gamma-terpinene, or beta-myrcene, whereas 50 to 100% inhibition was observed for isolates from a temperate swamp soil. The inhibitory effect of **monoterpenes** on methane oxidation was greatest with unsaturated, cyclic hydrocarbon forms [e.g., (-)-alpha-pinene, (S)-(-)-limonene, (R)-(+)-limonene, and gamma-terpinene]. Lower levels of inhibition occurred with oxide and alcohol derivatives [(R)-(+)-limonene oxide, alpha-pinene oxide, linalool, alpha-terpineol] and a noncyclic hydrocarbon (beta-myrcene). Isomers of pinene inhibited activity to different extents. Given their natural sources, **monoterpenes** may be significant factors affecting bacterial activities in nature.

=> s cl metabolizing host cell and monoterpene
TOTAL FOR ALL FILES
L36 0 C1 METABOLIZING HOST CELL AND MONOTERPENE

=> s cl metabolizing host cell and terpene

TOTAL FOR ALL FILES
L43 0 C1 METABOLIZING HOST CELL AND TERPENE

=> s methylobacter and monoterpene
TOTAL FOR ALL FILES
L50 7 METHYLOBACTER AND MONOTERPENE

=> dup rem l50
PROCESSING COMPLETED FOR L50
L51 2 DUP REM L50 (5 DUPLICATES REMOVED)

=> d ibib abs

L51 ANSWER 1 OF 2 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 1998125663 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9464387
TITLE: Effect of selected **monoterpenes** on methane oxidation, denitrification, and aerobic metabolism by bacteria in pure culture.
COMMENT: Erratum in: Appl Environ Microbiol 1998 Sep;64(9):3546
AUTHOR: Amaral J A; Ekins A; Richards S R; Knowles R
CORPORATE SOURCE: Department of Natural Resource Sciences, McGill University, Ste. Anne-de-Bellevue, Quebec, Canada.. amaral@usfca.edu
SOURCE: Applied and environmental microbiology, (1998 Feb) 64 (2) 520-5.
Journal code: 7605801. ISSN: 0099-2240.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199802
ENTRY DATE: Entered STN: 19980306
Last Updated on STN: 20000303
Entered Medline: 19980226

AB Selected **monoterpenes** inhibited methane oxidation by methanotrophs (Methylosinus trichosporium OB3b, **Methylobacter** luteus), denitrification by environmental isolates, and aerobic metabolism by several heterotrophic pure cultures. Inhibition occurred to various extents and was transient. Complete inhibition of methane oxidation by Methylosinus trichosporium OB3b with 1.1 mM (-)-alpha-pinene lasted for more than 2 days with a culture of optical density of 0.05 before activity resumed. Inhibition was greater under conditions under which particulate methane monooxygenase was expressed. No apparent consumption or conversion of **monoterpenes** by methanotrophs was detected by gas chromatography, and the reason that transient inhibition occurs is not clear. Aerobic metabolism by several heterotrophs was much less sensitive than methanotrophy was; Escherichia coli (optical density, 0.01), for example, was not affected by up to 7.3 mM (-)-alpha-pinene. The degree of inhibition was **monoterpene** and species dependent.
Denitrification by isolates from a polluted sediment was not inhibited by 3.7 mM (-)-alpha-pinene, gamma-terpinene, or beta-myrcene, whereas 50 to 100% inhibition was observed for isolates from a temperate swamp soil. The inhibitory effect of **monoterpenes** on methane oxidation was greatest with unsaturated, cyclic hydrocarbon forms [e.g., (-)-alpha-pinene, (S)-(-)-limonene, (R)-(+)-limonene, and gamma-terpinene]. Lower levels of inhibition occurred with oxide and alcohol derivatives [(R)-(+)-limonene oxide, alpha-pinene oxide, linalool, alpha-terpineol] and a noncyclic hydrocarbon (beta-myrcene). Isomers of pinene inhibited activity to different extents. Given their natural sources, **monoterpenes** may be significant factors affecting bacterial activities in nature.

=> d 2 ibib abs

L51 ANSWER 2 OF 2 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1997:283862 BIOSIS
DOCUMENT NUMBER: PREV199799583065
TITLE: Effect of selected **monoterpenes** on methane oxidation, denitrification and aerobic metabolism in pure culture.

AUTHOR(S): Amaral, J. A.; Ekins, A.; Richards, S. R.; Knowles, R.
CORPORATE SOURCE: McGill Univ., Ste. Anne de Bellevue, PQ, Canada
SOURCE: Abstracts of the General Meeting of the American Society for Microbiology, (1997) Vol. 97, No. 0, pp. 398. Meeting Info.: 97th General Meeting of the American Society for Microbiology. Miami Beach, Florida, USA. May 4-8, 1997. ISSN: 1060-2011.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
Conference; (Meeting Poster)
LANGUAGE: English
ENTRY DATE: Entered STN: 3 Jul 1997
Last Updated on STN: 3 Jul 1997

=> s methylococcus and monoterpene
TOTAL FOR ALL FILES
L58 0 METHYLOCOCCUS AND MONOTERPENE

=> s methylosinus and monoterpene
TOTAL FOR ALL FILES
L65 11 METHYLOSINUS AND MONOTERPENE

=> dup rem
ENTER L# LIST OR (END):l65
PROCESSING COMPLETED FOR L65
L66 3 DUP REM L65 (8 DUPLICATES REMOVED)

=>
=> d ibib abs l66

L66 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 1
ACCESSION NUMBER: 1998:282013 CAPLUS
DOCUMENT NUMBER: 129:4160
TITLE: Inhibition of methane consumption in forest soils by **monoterpenes**
AUTHOR(S): Amaral, J. A.; Knowles, R.
CORPORATE SOURCE: Department of Natural Resource Sciences, Macdonald Campus of McGill University, Ste. Anne-de-Bellevue, QC, Can.
SOURCE: Journal of Chemical Ecology (1998), 24(4), 723-734
CODEN: JCECD8; ISSN: 0098-0331
PUBLISHER: Plenum Publishing Corp.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Selected **monoterpenes** were tested for their ability to inhibit atm. methane consumption by three forest soils from different vegetation types and by the cultured methanotrophic strain, **Methylosinus** trichosporium OB3b. Subsurface soil from coniferous (Pinus banksiana), deciduous (Populus tremuloides), and mixed hardwood (Tsuga canadensis and Prunus pensylvanica) stands was used under field-moist (bulk and intact cores) and slurry conditions. Most of the hydrocarbon **monoterpenes** tested significantly inhibited (40-100%) methane consumption by soils at environmentally relevant levels, with (-)-.alpha.-pinene being the most effective. With the exception of .beta.-myrcene, **monoterpenes** also strongly inhibited methane oxidn. by **Methylosinus** trichosporium OB3b. Carbon dioxide prodn. was stimulated in all of the soils by the **monoterpenes** tested. In one case, methane prodn. was stimulated by (-)-.alpha.-pinene in an intact, aerobic core. Oxide and alc. monoterpenoids stimulated methane prodn. Thus, **monoterpenes** appear to be potentially important regulators of methane consumption and carbon metab. in forest soils.
REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d ibib abs l66 2-3

L66 ANSWER 2 OF 3 MEDLINE on STN DUPLICATE 2
ACCESSION NUMBER: 1998125663 MEDLINE

DOCUMENT NUMBER: PubMed ID: 9464387
TITLE: Effect of selected **monoterpenes** on methane oxidation, denitrification, and aerobic metabolism by bacteria in pure culture.
COMMENT: Erratum in: Appl Environ Microbiol 1998 Sep;64(9):3546
AUTHOR: Amaral J A; Ekins A; Richards S R; Knowles R
CORPORATE SOURCE: Department of Natural Resource Sciences, McGill University, Ste. Anne-de-Bellevue, Quebec, Canada.. amaral@usfca.edu
SOURCE: Applied and environmental microbiology, (1998 Feb) 64 (2) 520-5.
Journal code: 7605801. ISSN: 0099-2240.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199802
ENTRY DATE: Entered STN: 19980306
Last Updated on STN: 20000303
Entered Medline: 19980226

AB Selected **monoterpenes** inhibited methane oxidation by methanotrophs (**Methylosinus** trichosporium OB3b, Methylobacter luteus), denitrification by environmental isolates, and aerobic metabolism by several heterotrophic pure cultures. Inhibition occurred to various extents and was transient. Complete inhibition of methane oxidation by **Methylosinus** trichosporium OB3b with 1.1 mM (-)-alpha-pinene lasted for more than 2 days with a culture of optical density of 0.05 before activity resumed. Inhibition was greater under conditions under which particulate methane monooxygenase was expressed. No apparent consumption or conversion of **monoterpenes** by methanotrophs was detected by gas chromatography, and the reason that transient inhibition occurs is not clear. Aerobic metabolism by several heterotrophs was much less sensitive than methanotrophy was; Escherichia coli (optical density, 0.01), for example, was not affected by up to 7.3 mM (-)-alpha-pinene. The degree of inhibition was **monoterpene** and species dependent. Denitrification by isolates from a polluted sediment was not inhibited by 3.7 mM (-)-alpha-pinene, gamma-terpinene, or beta-myrcene, whereas 50 to 100% inhibition was observed for isolates from a temperate swamp soil. The inhibitory effect of **monoterpenes** on methane oxidation was greatest with unsaturated, cyclic hydrocarbon forms [e.g., (-)-alpha-pinene, (S)-(-)-limonene, (R)-(+)-limonene, and gamma-terpinene]. Lower levels of inhibition occurred with oxide and alcohol derivatives [(R)-(+)-limonene oxide, alpha-pinene oxide, linalool, alpha-terpineol] and a noncyclic hydrocarbon (beta-myrcene). Isomers of pinene inhibited activity to different extents. Given their natural sources, **monoterpenes** may be significant factors affecting bacterial activities in nature.

L66 ANSWER 3 OF 3 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1997:283862 BIOSIS
DOCUMENT NUMBER: PREV199799583065
TITLE: Effect of selected **monoterpenes** on methane oxidation, denitrification and aerobic metabolism in pure culture.
AUTHOR(S): Amaral, J. A.; Ekins, A.; Richards, S. R.; Knowles, R.
CORPORATE SOURCE: McGill Univ., Ste. Anne de Bellevue, PQ, Canada
SOURCE: Abstracts of the General Meeting of the American Society for Microbiology, (1997) Vol. 97, No. 0, pp. 398.
Meeting Info.: 97th General Meeting of the American Society for Microbiology. Miami Beach, Florida, USA. May 4-8, 1997.
ISSN: 1060-2011.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
Conference; (Meeting Poster)
LANGUAGE: English
ENTRY DATE: Entered STN: 3 Jul 1997
Last Updated on STN: 3 Jul 1997

=> s methylocyctic and monoterpene
TOTAL FOR ALL FILES
L73 0 METHYLOCYCTIC AND MONOTERPENE

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=> s methylomicrobium and monoterpene
TOTAL FOR ALL FILES
L80          0 METHYLOMICROBIUM AND MONOTERPENE

=> s methylophilus and monoterpene
TOTAL FOR ALL FILES
L87          0 METHYLOPHILUS AND MONOTERPENE

=> s methylobacillus and monoterpene
TOTAL FOR ALL FILES
L94          0 METHYLOBACILLUS AND MONOTERPENE

=> s methylobacterium and monoterpene
TOTAL FOR ALL FILES
L101         0 METHYLOBACTERIUM AND MONOTERPENE

=> s methanomonas and monoterpene
TOTAL FOR ALL FILES
L108         0 METHANOMONAS AND MONOTERPENE

=> s hyphomicrobium and monoterpene
TOTAL FOR ALL FILES
L115         0 HYPHOMICROBIUM AND MONOTERPENE

=> s xanthobacter
393 FILE CAPLUS
TOTAL FOR ALL FILES
L122      1660 XANTHOBACTER

=> s l122 and monoterpene
TOTAL FOR ALL FILES
L129         3 L122 AND MONOTERPENE

=> dup rem l129
PROCESSING COMPLETED FOR L129
L130          1 DUP REM L129 (2 DUPLICATES REMOVED)

=> d ibib abs

L130 ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2004 ACS on STN  DUPLICATE 1
ACCESSION NUMBER:        1988:34622  CAPLUS
DOCUMENT NUMBER:         108:34622
TITLE:                   Oxidation of gaseous and volatile hydrocarbons by
                         selected alkene-utilizing bacteria
AUTHOR(S):               Van Ginkel, C. G.; Welten, H. G. J.; De Bont, J. A. M.
CORPORATE SOURCE:        Dep. Microbiol., Agric. Univ., Wageningen, 6703 CT,
                         Neth.
SOURCE:                  Applied and Environmental Microbiology (1987), 53(12),
                         2903-7
                         CODEN: AEMIDF; ISSN: 0099-2240
DOCUMENT TYPE:           Journal
LANGUAGE:                English
AB   Eleven strains of alkene-utilizing Mycobacterium, Nocardia, and
     Xanthobacter were tested for their ability to growt with C1-C6
     alkanes, C2-C6 alkenes, alkadienes, and monoterpenes furnished
     individually as sole sources of C and energy in a mineral salts medium.  A
     limited no. of alkenes and alkanes supported growth of the bacteria; some
     bacteria were unable to grow on any of the satd. hydrocarbons tested.
     Monoterpenes were frequently used as C and energy sources by
     alkene-utilizing Mycobacterium and Nocardia.  Washed cell suspensions of
     alkene-grown bacteria attacked the whole range of alkenes tested, whereas
     only 3 strains oxidized alkanes as well.  The alkenes were oxidized either
     to H2O and CO2 or to epoxyalkanes.  Few epoxides accumulated in
     stoichiometric amts. from the corresponding alkenes, because most epoxides
     formed were further converted to other compds. like alkanediols.


=> s bacillus and monoterpene
TOTAL FOR ALL FILES
L137       119 BACILLUS AND MONOTERPENE
```

```
=> s l1137 and cyclic terpene
TOTAL FOR ALL FILES
L144         0 L1137 AND CYCLIC TERPENE

=> s l137 and limonene
TOTAL FOR ALL FILES
L151        45 L137 AND LIMONENE

=> s l151 not 2001-2004/py
L166         4 FILE MEDLINE
L167         9 FILE CAPLUS
L168         4 FILE SCISEARCH
L169         3 FILE LIFESCI
L170         4 FILE BIOSIS
L171         0 FILE EMBASE

TOTAL FOR ALL FILES
L172        24 L151 NOT 2001-2004/PY

=> dup rem l172
PROCESSING COMPLETED FOR L172
L173         14 DUP REM L172 (10 DUPLICATES REMOVED)

=> d ibib abs 1-14

L173 ANSWER 1 OF 14  CAPLUS  COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER:         2000:631488  CAPLUS
DOCUMENT NUMBER:          133:221683
TITLE:                    Monoterpene producing microorganism
                          possessing a geranyl diphosphate synthase gene and a
                          monoterpene synthase gene
INVENTOR(S):              Oikawa, Taneaki; Hirooka, Kazutake; Ohnuma, Shinichi;
                          Nishino, Tokuzo
PATENT ASSIGNEE(S):       Sozoteki Seibutsu Kogaku Kenkyusho K. K., Japan
SOURCE:                   Jpn. Kokai Tokkyo Koho, 15 pp.
                          CODEN: JKXXAF
DOCUMENT TYPE:            Patent
LANGUAGE:                 Japanese
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.        KIND  DATE           APPLICATION NO.   DATE
     ---------------   ----  --------       ---------------   --------
     JP 2000245482      A2   20000912       JP 1999-59431     19990305
PRIORITY APPLN. INFO.:                    JP 1999-59431       19990305
AB   Monoterpene producing microorganism possessing a geranyl
     diphosphate synthase gene and a monoterpene synthase gene, is
     disclosed.  Mutant farnesyl diphosphate (FPP) synthase gene coding for
     serine 82 to phenylalanine substitution and limonene synthase
     gene, more specifically are used to transform the microorganism.  A
     farnesyl diphosphate synthase gene was cloned from Bacillus
     stearothermophilus and the limonene synthase gene was cloned
     from spearmint, Mentha spicata.  E. coli transformed with the mutant FPP
     synthase gene and limonene synthase gene showed a high
     limonene synthesis activity.

L173 ANSWER 2 OF 14     MEDLINE on STN
ACCESSION NUMBER:   1999332626     MEDLINE
DOCUMENT NUMBER:    PubMed ID: 10404547
TITLE:              Antimicrobial activity of the essential oil of Calamintha
                    nepeta and its constituent pulegone against bacteria and
                    fungi.
AUTHOR:             Flamini G; Cioni P L; Puleio R; Morelli I; Panizzi L
CORPORATE SOURCE:   Azienda Sanitaria Locale N.6, Sezione Biotossicologica
                    Dipartimento Provinciale A.R.P.A.T., Livorno, Italy.
SOURCE:             Phytotherapy research : PTR, (1999 Jun) 13 (4) 349-51.
                    Journal code: 8904486. ISSN: 0951-418X.
PUB. COUNTRY:       ENGLAND: United Kingdom
DOCUMENT TYPE:      Journal; Article; (JOURNAL ARTICLE)
LANGUAGE:           English
FILE SEGMENT:       Priority Journals
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ENTRY MONTH: 199909
ENTRY DATE: Entered STN: 19990925
Last Updated on STN: 19990925
Entered Medline: 19990916

AB The chemical composition of the essential oil of Calamintha nepeta and its antimicrobial activity against Listeria monocytogenes, **Bacillus** cereus, Salmonella veneziana, S. paratyphi B. S. typhimurium, Fusarium moniliforme, Botrytis cinerea, Aspergillus niger and Pyricularia oryzae have been studied. Moreover the main constituents of the oil (**limonene**, menthone, pulegone, menthol) have been tested against the same microorganisms. Only pulegone showed antimicrobial activity, particularly against all the Salmonella species.

L173 ANSWER 3 OF 14 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1998:397733 CAPLUS
DOCUMENT NUMBER: 129:40196
TITLE: Method for production of **monoterpene** derivatives of **limonene**
INVENTOR(S): Savithiry, Natarajan; Oriel, Patrick J.
PATENT ASSIGNEE(S): Board of Trustees Operating Michigan State University, USA
SOURCE: U.S., 7 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5763237	A	19980609	US 1997-857873	19970516

PRIORITY APPLN. INFO.: US 1997-857873 19970516

AB Enzymic microbial degrdn. of **limonene** with simultaneous extn. of the degrdn. products with a non-water miscible org. solvent is described. Microbial degrdn. at elevated temps. employing both an aq. phase contg. **limonene** and a neat **limonene** phase produced .alpha.-terpineol with addnl. prodn. of carvone.

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L173 ANSWER 4 OF 14 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 1999208975 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10192895
TITLE: Degradation of pinene by **Bacillus** pallidus BR425.
AUTHOR: Savithiry N; Gage D; Fu W; Oriel P
CORPORATE SOURCE: Department of Microbiology, Michigan State University East Lansing 48824, USA.
SOURCE: Biodegradation, (1998) 9 (5) 337-41.
Journal code: 9100834. ISSN: 0923-9820.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199905
ENTRY DATE: Entered STN: 19990517
Last Updated on STN: 19990517
Entered Medline: 19990503

AB An aerobic thermophile has been isolated from an alpha-pinene enrichment culture. The isolate, which was designated BR425, has been tentatively identified as **Bacillus** pallidus using 16S ribosomal RNA gene sequencing and organism morphology. Monophasic and biphasic incubations of BR425 cells with alpha-pinene, beta-pinene, and **limonene** yielded a number of oxidized **monoterpene** metabolites with carveol as a common metabolite. A pinene degradation pathway with carveol and carvone as central metabolic intermediates is suggested.

L173 ANSWER 5 OF 14 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1998:238117 CAPLUS
DOCUMENT NUMBER: 128:306234
TITLE: Plectranthus madagascariensis: morphology of the glandular trichomes, essential oil composition, and

its biological activity
AUTHOR(S): Ascensao, Lia; Figueiredo, A. Cristina; Barroso, Jose G.; Pedro, Luis G.; Schripsema, Jan; Deans, Stanley G.; Scheffer, Johannes J. C.
CORPORATE SOURCE: Departamento de Biologia Vegetal, Faculdade de Ciencias de Lisboa, Lisbon, 1780, Port.
SOURCE: International Journal of Plant Sciences (1998), 159(1), 31-38
CODEN: IPLSE2; ISSN: 1058-5893
PUBLISHER: University of Chicago Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Glandular and nonglandular trichomes are spread over the vegetative and reproductive organs of Plectranthus madagascariensis. Two morphol. distinct types of glandular trichomes (capitate and peltate) are described. Capitate trichomes have an ovoid unicellular head and a short stalk cell or an elongated two- to three-celled stalk slightly enlarged at the base. Peltate trichomes, which show in vivo a characteristic orange-to-reddish color, are large, flattened-to-depressed in the center, and often appear as a ring of minute gems. They are composed of a large head with eight glandular cells arranged in a single layer. An unusual kind of capitate trichomes, reported for the first time in Lamiaccae, occurs typically restricted to the calyx. These trichomes possess a two- or three-celled stalk and a long, unicellular conical, glandular head. The several types of trichomes differ in the secretion process. The essential oils of P. madagascariensis, isolated by hydrodistn. and by distn.-extn. sep. from flowers and from leaves collected during the flowering and the vegetative phases of the plant were analyzed by gas chromatog. and gas chromatog.-mass spectrometry. The main component of the oils was a diterpene, 6.7-dehydroroyleanone, isolated as orange-to-reddish crystals, which represented 28, 87, and 41% of the oils from the flowers and from the leaves collected during the flowering and vegetative phases, resp. The essential oils of P. madagascariensis showed bactericidal activity against **Bacillus** subtilis, Micrococcus sp., Staphylococcus aureus, and Yersinia enterocolitica, and revealed a modest antioxidant activity.

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L173 ANSWER 6 OF 14 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1997:761600 CAPLUS
DOCUMENT NUMBER: 128:31102
TITLE: Process for the preparation of **monoterpenes** using bacterium containing recombinant DNA for the catabolism of **limonene**
INVENTOR(S): Oriel, Patrick J.; Savithiry, Srinivasan; Chang, Hae Choon
PATENT ASSIGNEE(S): Board of Trustees Operating Michigan State University, USA
SOURCE: U.S., 8 pp., Cont.-in-part of U.S. 5,487,988.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5688673	A	19971118	US 1995-508818	19950728
US 5487988	A	19960130	US 1994-290469	19940815

PRIORITY APPLN. INFO.: US 1994-290469 19940815

AB The pathway encoding **limonene** catabolism was cloned as a 9.6-kb chromosomal endonuclease EcoRI digest fragment from **Bacillus** stearothermophilus strain BR388 into Escherichia coli, conferring growth on **limonene** as a sole carbon source with bioprodn. of .alpha.-terpineol, perillyl alc., and perillyl aldehyde. Incubation of the recombinant E. coli with perillyl alc. resulted in formation of perillyl aldehyde and perillic acid. A 3.9-kb HindIII digest of the 9.6-kb fragment produced DNA which in E. coli converted **limonene** to carveol and carvone.

L173 ANSWER 7 OF 14 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2002:81084 BIOSIS
DOCUMENT NUMBER: PREV200200081084
TITLE: Process and bacterial cultures for the preparation of perillyl compounds.
AUTHOR(S): Chang, H. C. [Inventor]; Oriel, P. J. [Inventor]
CORPORATE SOURCE: Taejeon, North Korea
ASSIGNEE: BOARD OF TRUSTEES OPERATING MICHIGAN STATE UNIVERSITY
PATENT INFORMATION: US 5652137 July 29, 1997
SOURCE: Official Gazette of the United States Patent and Trademark Office Patents, (July 29, 1997) Vol. 1200, No. 5, pp. 3521. print.
CODEN: OGUPE7. ISSN: 0098-1133.
DOCUMENT TYPE: Patent
LANGUAGE: English
ENTRY DATE: Entered STN: 16 Jan 2002
Last Updated on STN: 25 Feb 2002

L173 ANSWER 8 OF 14 MEDLINE on STN DUPLICATE 2
ACCESSION NUMBER: 97313845 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9170246
TITLE: Production of alpha-terpineol from Escherichia coli cells expressing thermostable **limonene** hydratase.
AUTHOR: Savithiry N; Cheong T K; Oriel P
CORPORATE SOURCE: Department of Microbiology, Michigan State University, East Lansing 48824, USA.
SOURCE: Applied biochemistry and biotechnology, (1997 Spring) 63-65 213-20.
Journal code: 8208561. ISSN: 0273-2289.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199707
ENTRY DATE: Entered STN: 19970724
Last Updated on STN: 19970724
Entered Medline: 19970716
AB The genes encoding a thermostable **limonene** hydratase have been located on a cloned fragment in Escherichia coli conferring growth on **limonene** and production of the **monoterpenes** perillyl alcohol and alpha-terpineol. Whole cell bioconversion studies at elevated temperature employing both an aqueous phase and neat **limonene** phase demonstrated significant production of alpha-terpineol with additional production of carvone.

L173 ANSWER 9 OF 14 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1996:210067 CAPLUS
DOCUMENT NUMBER: 124:258685
TITLE: Preparation of perillyl compounds using **Bacillus** stearothermophilus
INVENTOR(S): Chang, Hae C.; Oriel, Patrick J.
PATENT ASSIGNEE(S): Board of Trustees Operating Michigan State University, USA
SOURCE: U.S., 9 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5487988	A	19960130	US 1994-290469	19940815
US 5688673	A	19971118	US 1995-508818	19950728
US 5652137	A	19970729	US 1995-523465	19950905

PRIORITY APPLN. INFO.: US 1994-290469 19940815
OTHER SOURCE(S): CASREACT 124:258685
AB A process for the prepn. of **monoterpene** compds. (such as perillyl alc., aldehyde and .alpha.-terpineol) from **limonene** is described. The process uses B. stearothermophilus which is effective at

high temps. (55-70.degree.). A preferred strain of B. stearothermophilus is ATCC 55596.

L173 ANSWER 10 OF 14 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1997:194072 CAPLUS
DOCUMENT NUMBER: 126:242692
TITLE: Composition and antimicrobial activity of the essential oil of the fruits of Schinus dependens Ort.
AUTHOR(S): El-Sakhawy, F.S.
CORPORATE SOURCE: Department of Pharmacognosy, Faculty of Pharmacy, Cairo University, Kasr El-Ainy, Cairo, 11562, Egypt
SOURCE: Al-Azhar Journal of Pharmaceutical Sciences (1996), 17, 159-170
CODEN: AAJPFT; ISSN: 1110-1644
PUBLISHER: Al-Azhar University, Faculty of Pharmacy
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The essential oil of ripe fruits of Schinus dependens Ort. was obtained by steam-distn. (2.1%). The oil was analyzed by gas chromatog.-mass spectroscopy (GC-MS) technique. Twenty-four components representing 97.91% of the total oil compn. (43 components) were identified. **Monoterpene** hydrocarbons were the most abundant constituents of the oil (74.78%). Among these, **limonene** (29.71%) constituted the highest percentage followed by .alpha.-phellandrene (21%). In addn. significant amts. of p-cymene, .beta.-pinene, .alpha.-pinene, and myrcene were present. The oil showed pronounced antimicrobial activity against **Bacillus** subtilis, Staphylococcus aureus, Escherichia coli, Pseudomonas aeruginosa, and Klebsiella pneumonia, the oil also exhibited a significant activity against Candida albicans.

L173 ANSWER 11 OF 14 LIFESCI COPYRIGHT 2004 CSA on STN
ACCESSION NUMBER: 97:51441 LIFESCI
TITLE: Preparation of perillyl compounds using **Bacillus** stearothermophilus
CORPORATE SOURCE: MICHIGAN STATE UNIVERSITY
SOURCE: (1996) . US Patent 5487988; US Cl. 435/147 435/155 435/252.5 435/832.
DOCUMENT TYPE: Patent
FILE SEGMENT: A
LANGUAGE: English
AB A process for the preparation of **monoterpene** compounds (such as perillyl alcohol, aldehyde and .alpha.-terpineol) from **limonene** is described. The process uses **Bacillus** stearothermophilus which is effective at high temperatures (55.degree. to 70.degree. C.). A preferred strain of **Bacillus** stearothermophilus is ATCC 55596.

L173 ANSWER 12 OF 14 MEDLINE on STN DUPLICATE 3
ACCESSION NUMBER: 96141372 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8585332
TITLE: Comparative effects of gamma and microwave irradiation on the quality of black pepper.
AUTHOR: Emam O A; Farag S A; Aziz N H
CORPORATE SOURCE: Faculty of Specified Education, Benha, Egypt.
SOURCE: Zeitschrift fur Lebensmittel-Untersuchung und -Forschung, (1995 Dec) 201 (6) 557-61.
Journal code: 7509812. ISSN: 0044-3026.
PUB. COUNTRY: GERMANY: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199603
ENTRY DATE: Entered STN: 19960327
Last Updated on STN: 19960327
Entered Medline: 19960315
AB Powdered black pepper from Egyptian markets, was irradiated with different recommended doses of gamma rays (5.0 and 10.0 kGy) and with microwaves for different periods (20, 40 and 75 s) to improve its hygienic quality. The most common bacterial isolates were of three genera **Bacillus,** Clostridium and Micrococcus (7.5 x 10(6)), whereas the predominant fungi (7.8 x 10(4)) were Aspergillus species, A. glaucus, A. flavus, A. niger and A. ochraceus. Doses of gamma irradiation used (5.0 and 10 kGy) were

sufficient to decrease spore-forming bacteria (SFB) and to inhibit the fungal flora and coliforms which contaminated the black pepper powder. Microwave treatments for 40 s and 75 s were of the same effectiveness whereas treatment for 20 s was less so. GLC analysis proved the presence of 31 peaks, only 19 compounds were identified as **monoterpene** hydrocarbons (56.21%), the major one being beta-phellandrene and **limonene**. Sesquiterpenes were also present, mainly beta-caryollphyllene (3.69%) as well as oxygenated compounds such as terpenol, geraniol, Me-chavicol, eugenol and anisol. Gamma irradiation at 5 kGy and 10 kGy respectively decreased the numbers of identified compounds from 21 (86.58% concentration) in untreated pepper to 16 (59.22% concentration), 15 (54.06% concentration). In comparison, microwave treatments, particularly for 40 s and 75 s, increased the concentration of the same compounds. The results obtained indicate that microwave treatment, under these conditions, is a safe and suitable technique for decontamination of black pepper which does not result in a great loss of flavour compounds, as compared with recommended doses of gamma irradiation.

L173 ANSWER 13 OF 14 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 4
ACCESSION NUMBER: 1994:628898 CAPLUS
DOCUMENT NUMBER: 121:228898
TITLE: Bioproduction of perillyl alcohol and related **monoterpenes** by isolates of **Bacillus** stearothermophilus
AUTHOR(S): Chang, Hae C.; Oriel, Patrick
CORPORATE SOURCE: Dep. Microbiol., Michigan State Univ., East Lansing, MI, 48824-1101, USA
SOURCE: Journal of Food Science (1994), 59(3), 660-2, 686
CODEN: JFDSAZ; ISSN: 0022-1147
DOCUMENT TYPE: Journal
LANGUAGE: English
AB **Bacillus** stearothermophilus BR388 was isolated from orange peel by an enrichment culture using (+)-**limonene**. The thermophilic isolate exhibited growth between 45 and 68.degree.C, with optimal growth near 55.degree.C. BR388 could grow on **limonene** as a sole carbon source, but grew and degraded **limonene** more effectively when supplemented with small amts. of yeast ext. Perillyl alc. was the major conversion product, with .alpha.-terpineol and perillyl aldehyde as minor products. Strains of B. stearothermophilus previously isolated from arom. enrichments also grew on **limonene**, but had higher sensitivity to **limonene** toxicity than did BR388.

L173 ANSWER 14 OF 14 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 94:439239 SCISEARCH
THE GENUINE ARTICLE: NW348
TITLE: BIOPRODUCTION OF PERILLYL ALCOHOL AND RELATED **MONOTERPENES** BY ISOLATES OF **BACILLUS** -STEAROTHERMOPHILUS
AUTHOR: CHANG H C (Reprint); ORIEL P
CORPORATE SOURCE: MICHIGAN STATE UNIV, DEPT MICROBIOL, GILTNER HALL, E LANSING, MI, 48824 (Reprint)
COUNTRY OF AUTHOR: USA
SOURCE: JOURNAL OF FOOD SCIENCE, (MAY/JUN 1994) Vol. 59, No. 3, pp. 660.
ISSN: 0022-1147.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: AGRI
LANGUAGE: ENGLISH
REFERENCE COUNT: 15
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB **Bacillus** stearothermophilus BR388 was isolated from orange peel by an enrichment culture using (+)-**limonene**. The thermophilic isolate exhibited growth between 45 and 68 degrees C., with optimum growth near 55 degrees C. BR388 could grow on **limonene** as a sole carbon source, but grew and degraded **limonene** more effectively when supplemented with small amounts of yeast extract. Perillyl alcohol was the major conversion product, with alpha-terpineol and perillyl aldehyde as minor products. Strains of B. stearothermophilus previously isolated from aromatic enrichments also grew on **limonene**, but had higher sensitivity to **limonene**

toxicity than did BR388.

=> s paracoccus and monoterpene
TOTAL FOR ALL FILES
L180 1 PARACOCCUS AND MONOTERPENE

=> d ibib abs

L180 ANSWER 1 OF 1 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 1999:621681 SCISEARCH
THE GENUINE ARTICLE: 223WR
TITLE: Anaerobic mineralization of quaternary carbon atoms: Isolation of denitrifying bacteria on dimethylmalonate
AUTHOR: Kniemeyer O; Probian C; RosselloMora R; Harder J (Reprint)
CORPORATE SOURCE: MAX PLANCK INST MARINE MIKROBIOL, ABT MIKROBIOL, DEPT MICROBIOL, CELSIUSSTR 1, D-28359 BREMEN, GERMANY (Reprint); MAX PLANCK INST MARINE MIKROBIOL, ABT MIKROBIOL, DEPT MICROBIOL, D-28359 BREMEN, GERMANY; MAX PLANCK INST MARINE MIKROBIOL, MOL ECOL GRP, D-28359 BREMEN, GERMANY
COUNTRY OF AUTHOR: GERMANY
SOURCE: APPLIED AND ENVIRONMENTAL MICROBIOLOGY, (AUG 1999) Vol. 65, No. 8, pp. 3319-3324.
Publisher: AMER SOC MICROBIOLOGY, 1325 MASSACHUSETTS AVENUE, NW, WASHINGTON, DC 20005-4171.
ISSN: 0099-2240.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE; AGRI
LANGUAGE: English
REFERENCE COUNT: 36
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The microbial capacity to degrade simple organic compounds with quaternary carbon atoms was demonstrated by enrichment and isolation of five denitrifying strains on dimethylmalonate as the sole electron donor and carbon source. Quantitative growth experiments showed a complete mineralization of dimethylmalonate. According to phylogenetic analysis of the complete 16S rRNA genes, two strains isolated from activated sewage sludge were related to the genus **Paracoccus** within the alpha-Proteobacteria (98.0 and 98.2% 16S rRNA gene similarity to **Paracoccus** dentrificans(T)), and three strains isolated from freshwater ditches were affiliated with the P-Proteobacteria (97.4 and 98.3% 16S rRNA gene similarity to Herbaspirillum seropedicae(T) and Acidovorax facilis(T), respectively). Most-probable-number determinations for denitrifying populations in sewage sludge yielded 4.6 x 10(4) dimethylmalonate utilizing cells ml(-1), representing up to 0.4% of the total culturable nitrate-reducing population.

=> file .nash
=> s nocardia and monoterpene
L1 2 FILE MEDLINE
L2 3 FILE CAPLUS
L3 4 FILE SCISEARCH
L4 1 FILE LIFESCI
L5 2 FILE BIOSIS
L6 1 FILE EMBASE

TOTAL FOR ALL FILES
L7 13 NOCARDIA AND MONOTERPENE

=> dup rem
ENTER L# LIST OR (END):7
7 IS NOT VALID HERE
The L-number entered has not been defined in this session, or it has been deleted. To see the L-numbers currently defined in this session, enter DISPLAY HISTORY at an arrow prompt (=>).

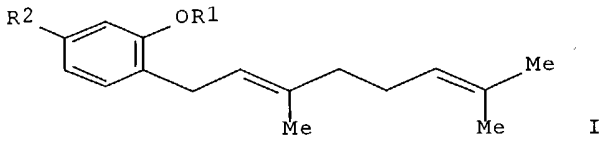
=> dup rem l7
PROCESSING COMPLETED FOR L7
L8 9 DUP REM L7 (4 DUPLICATES REMOVED)

=> d ibib abs

L8 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:21344 CAPLUS
DOCUMENT NUMBER: 134:70425
TITLE: **Monoterpenes** having antitumor and antibacterial activity from **Nocardia** brasiliensis
INVENTOR(S): Nemoto, Akira; Tanaka, Taiji; Komaki, Hisayuki; Yasawa, Katsukiyo; Mikami, Jo; Tsuda, Masashi; Kobayashi, Junichi
PATENT ASSIGNEE(S): Higeta Shoyu Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001002613	A2	20010109	JP 1999-175979	19990622

PRIORITY APPLN. INFO.: JP 1999-175979 19990622
GI



I

AB The title compds., namely 8-(2-hydroxyphenyl)-2,6-dimethyl-2,6-octadiene derivs. (I; R1 = H, Me; R2 = CH2OH, CO2Me) are obtained by fermn. of **Nocardia** brasiliensis and extn. of the microorganism. Thus, **Nocardia** brasiliensis IMF 0667 (FERM BP-6727) was aerobically cultured in a medium contg. glucose 2, meat ext. 0.5, polypeptone P1 0.5, polypeptone 0.5,and NaCl 0.3% (pH 7.0, 150 L) at 28.degree. for 90 h and filtered through a cloth to recover the microorganism. The microorganism was extd. with 3 L methanol and the ext. was concd. by an evaporator, treated with 300 mL purified water, and extd. with Et2O (3 .times. 1 L). The Et2O layer was concd. by a evaporator and the residue was subjected to silica gel chromatog. using n-hexane/EtOAc as the eluent to give I (R1 = H, R2 = CH2OH) 13, I (R1 = H, R2 = CO2Me) 3, and I (R1 = Me, R2 = CO2Me) 5 mg which showed IC50 of 0.91, 0.5, and 0.60 .mu.g/mL, resp., for inhibiting the proliferation of HL-60 cells.

=> d ibib abs 2-9

L8 ANSWER 2 OF 9 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 2001:436445 SCISEARCH
THE GENUINE ARTICLE: 433KV
TITLE: Bioconversion of alpha- and beta-pinene by Pseudomonas sp strain PIN
AUTHOR: Yoo S K (Reprint); Day D F; Cadwallader K R
CORPORATE SOURCE: Rutgers State Univ, Cook Coll, Dept Entomol, 93 Lipman Dr, Blake Hall, New Brunswick, NJ 08901 USA (Reprint); Louisiana State Univ, Ctr Agr, Louisiana Agr Expt Stn, Audubon Sugar Inst, Baton Rouge, LA 70803 USA
COUNTRY OF AUTHOR: USA
SOURCE: PROCESS BIOCHEMISTRY, (APR 2001) Vol. 36, No. 10, pp. 925-932.
Publisher: ELSEVIER SCI LTD, THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND.
ISSN: 0032-9592.
DOCUMENT TYPE: Article; Journal

LANGUAGE: English
REFERENCE COUNT: 28
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB A soil pseudomonad capable of metabolizing either alpha- or beta -pinene as sole carbon and energy source was isolated with an enrichment culture. Culture broth in mineral media gave rise to a pine-like aroma during the initial fermentation stage and a fresh rose-like aroma during the late fermentation stage. No growth inhibition was found up to 10% pinenes concentration. The bioconversion products of cx-pinene were identified as limonene, p-cymene, alpha -terpinolene, camphor, terpinen-4-ol, a-terpineol, endo-borneol, and p-cymene-8-ol. The bioconversion products of beta -pinene were the same except for the presence of fenchyl alcohol and the absence of camphor. Most of the accumulated products were p-menthene derivatives such as p-cymene, limonene, and alpha -terpinolene in both substrates. Total bioconversion was 33.5% of alpha -pinene and 58.8% of beta -pinene. (C) 2001 Elsevier Science Ltd. All rights reserved.

L8 ANSWER 3 OF 9 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 2000:869656 SCISEARCH
THE GENUINE ARTICLE: 373BP
TITLE: Stability and detection of alpha-pinene oxide in aqueous culture medium
AUTHOR: Kajihara K K; Amaral J A (Reprint); Toia R F
CORPORATE SOURCE: UNIV SAN FRANCISCO, DEPT BIOL, 2130 FULTON ST, SAN FRANCISCO, CA 94117 (Reprint); UNIV SAN FRANCISCO, DEPT BIOL, SAN FRANCISCO, CA 94117; UNIV SAN FRANCISCO, DEPT ENVIRONM SCI, SAN FRANCISCO, CA 94117
COUNTRY OF AUTHOR: USA
SOURCE: ENVIRONMENTAL TOXICOLOGY AND CHEMISTRY, (SEP 2000) Vol. 19, No. 9, pp. 2235-2238.
Publisher: SETAC, 1010 NORTH 12TH AVE, PENSACOLA, FL 32501-3367.
ISSN: 0730-7268.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: AGRI
LANGUAGE: English
REFERENCE COUNT: 13
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Methane consumption by methanotrophic bacteria was previously shown to be temporarily inhibited by alpha -pinene. Based on literature considerations, loss of inhibition may be due to bacterial degradation of the **monoterpene** to alpha -pinene oxide, an anticipated metabolite. However, since alpha -pinene oxide is unstable in aqueous media, detection of its production by methanotrophs or other bacteria is problematic. Therefore, we used gas chromatography-mass spectrometry analysis to study the chemical breakdown of alpha -pinene oxide in various buffer systems (Tris [hydroxymethyl]aminomethane, 3-[N-morpholino]propanesulfonic acid, phosphate; pH 7-9) suitable for bacterial whole-cell and cell-free experiments. In every case, aqueous phase alpha -pinene oxide was unstable and its disappearance was accompanied by the appearance of five decomposition products in a characteristic fingerprint that was in part buffer dependent. However, this fingerprint was adequately stable in phosphate buffer such that its appearance could be used to infer the intermediacy of alpha -pinene oxide if produced by the bacteria at or near their optimal pH.

L8 ANSWER 4 OF 9 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 1998:587727 SCISEARCH
THE GENUINE ARTICLE: 104DZ
TITLE: Alcaligenes defragrans sp. nov., description of four strains isolated on alkenoic **monoterpenes** ((+)-menthene, alpha-pinene, 2-carene, and alpha-phellandrene) and nitrate
AUTHOR: Foss S; Heyen U; Harder J (Reprint)
CORPORATE SOURCE: MAX PLANCK INST MARINE MIKROBIOL, ABT MIKROBIOL, CELSIUSSTR 1, D-283590 BREMEN, GERMANY (Reprint); MAX PLANCK INST MARINE MIKROBIOL, ABT MIKROBIOL, D-283590 BREMEN, GERMANY
COUNTRY OF AUTHOR: GERMANY
SOURCE: SYSTEMATIC AND APPLIED MICROBIOLOGY, (JUN 1998) Vol. 21,

No. 2, pp. 237-244.
Publisher: GUSTAV FISCHER VERLAG, VILLENGANG 2, D-07745 JENA, GERMANY.
ISSN: 0723-2020.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: English
REFERENCE COUNT: 46
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

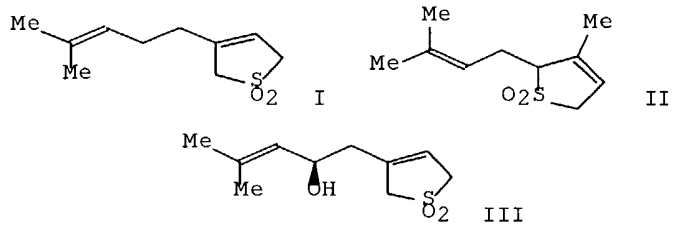
AB Four pseudomonad strains 51Men, 54Pin, 62Car and 65Phen were recent ly isolated on the **monoterpenes** (+)-menthene, alpha-pinene, 2-carene and alpha-phellandrene as sole carbon source and nitrate as electron acceptor. These bacteria were characterised. The motile, mesophilic, Gram-negative rods had a strictly respiratory metabolism. **Monoterpenes** as carbon sources were completely mineralised to carbon dioxide. The physiology of all strains was very similar, but displayed an individual utilisation preference for the isolation substrate. The fatty acid composition of whole cells showed a high degree of similarity to that of Alcaligenes faecalis. Comparative 16S rDNA data analysis placed the isolates into the beta-subclass of Proteobacteria in a common offshoot together with Alcaligenes and Bordetalla species. On the basis of these characteristics, the strains are described as a new species belonging to the genus Alcaligenes, A. defragrans sp. nov., with strain 54Pin (DSM 12141(T)) as type strain.

L8 ANSWER 5 OF 9 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 94:345236 SCISEARCH
THE GENUINE ARTICLE: NN221
TITLE: RING-CLEAVAGE REACTIONS IN THE METABOLISM OF (-)-MENTHOL AND (-)-MENTHONE BY A CORYNEBACTERIUM SP
AUTHOR: WILLIAMS D R; TRUDGILL P W (Reprint)
CORPORATE SOURCE: UNIV COLL WALES, INST BIOL SCI, ABERYSTWYTH SY23 3DD, DYFED, WALES (Reprint); UNIV COLL WALES, INST BIOL SCI, ABERYSTWYTH SY23 3DD, DYFED, WALES
COUNTRY OF AUTHOR: WALES
SOURCE: MICROBIOLOGY-UK, (MAR 1994) Vol. 140, Part 3, pp. 611-616.
ISSN: 1350-0872.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: 24
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Corynebacterium sp. strain RWM1 grew with (-)-menthol, (-)-menthone and other acyclic **monoterpenes** as sole carbon sources. Growth on menthol was very slow, with a doubling time of more than 24 h, and was not rapid with (-)-menthone (doubling time 12 h). Concentrations of either carbon source greater than 0.025% inhibited growth. (-)-Menthone-grown cultures transiently accumulated 3,7-dimethyl-6-hydroxyoctanoate during growth, and (-)-menthol-grown cells oxidized (-)-menthol, (-)-menthone, 3,7-dimethyl-6-octanolide and 3.7-dimethyl-6-hydroxyoctanoate. Although neither a menthol oxidase nor a menthol dehydrogenase could be detected in extracts of (-)-menthol- or (-)-menthone-grown cells, an induced NADPH-linked monooxygenase with activity towards (-)-menthone was readily detected. With crude cell extracts, only 3,7-dimethyl-6-hydroxyoctanoate was detected as the reaction product. When the (-)-menthone monooxygenase was separated from an induced 3.7-dimethyl-6-octanolide hydrolase by chromatography on hydroxyapatite, the lactone 3,7-dimethyl-6-octanolide was shown to be the product of oxygenation.

L8 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 1
ACCESSION NUMBER: 1992:610663 CAPLUS
DOCUMENT NUMBER: 117:210663
TITLE: Microbial hydroxylation of activated acyclic **monoterpene** hydrocarbons
AUTHOR(S): Abraham, Wolf Rainer; Arfmann, Hans Adolf
CORPORATE SOURCE: Ges. Biotechnol. Forsch. mbH, Braunschweig, W-3300, Germany
SOURCE: Tetrahedron (1992), 48(32), 6681-8
CODEN: TETRAB; ISSN: 0040-4020
DOCUMENT TYPE: Journal
LANGUAGE: English

GI



AB While fermn. of myrcene and ocimene led to products in very low yields, good yields were obtained by protection and activation of the diene moiety by SO2. Microbial hydroxylations of the sulfolenes myrcene sulfone (I) and ocimene sulfone (II) yielded 8-hydroxy compds. in .ltoreq.60% yield. Bacteria favor the 8Z- while fungi produce mainly the 8E-alc. The bacterium Sebekia benihana NRRL 11111 oxidized I to 5R-hydroxymyrcene sulfone (III), a compd. which can be converted to the pheromone ipsdienol simply by heating. Some unusual isomerizations were found, all occurring in low yield. Addn. of hydroquinone to the acyclic double bond of the substrate was obsd. in the incubations with some strains.

L8 ANSWER 7 OF 9 MEDLINE on STN DUPLICATE 2
ACCESSION NUMBER: 92257129 MEDLINE
DOCUMENT NUMBER: PubMed ID: 1368150
TITLE: Microbial metabolism of **monoterpenes**--recent developments.
AUTHOR: Trudgill P W
CORPORATE SOURCE: Department of Biochemistry, University College of Wales, Aberystwyth, Dyfed, UK.
SOURCE: Biodegradation, (1990) 1 (2-3) 93-105.
Journal code: 9100834. ISSN: 0923-9820.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Biotechnology
ENTRY MONTH: 199206
ENTRY DATE: Entered STN: 19950809
Last Updated on STN: 19950809
Entered Medline: 19920618

AB **Monoterpenes** are important renewable resources for the perfume and flavour industry but the pathways and enzymology of their degradation by microorganisms are not well documented. Until recently the acyclic **monoterpene** alcohols, (+)-camphor and the isomers of limonene were the only compounds for which significant sections of catabolic pathways and associated enzymology had been reported. In this paper recent developments in our understanding of the enzymology of ring cleavage by microorganisms capable of growth with 1,8-cineole and alpha-pinene are described. 1,8-Cineole has the carbocyclic skeleton of a monocyclic **monoterpene** with the added complication of an internal ether linkage. Ring hydroxylation strategy and biological Baeyer-Villiger oxygenation lead to an efficient method for cleaving the ether linkage. alpha-Pinene is an unsaturated bicyclic **monoterpene** hydrocarbon. At least two catabolic pathways exist. Information concerning one of them, in which alpha-pinene may be initially converted into limonene, is rudimentary. The other involves attack at the double bond resulting in formation of alpha-pinene epoxide. Ring cleavage is then catalysed by a novel lyase that requires no additional components and breaks both carbocyclic rings in a concerted manner.

L8 ANSWER 8 OF 9 MEDLINE on STN
ACCESSION NUMBER: 88032812 MEDLINE

DOCUMENT NUMBER: PubMed ID: 3667521
TITLE: Bacterial metabolism of alpha-pinene: pathway from alpha-pinene oxide to acyclic metabolites in **Nocardia** sp. strain P18.3.
AUTHOR: Griffiths E T; Bociek S M; Harries P C; Jeffcoat R; Sissons D J; Trudgill P W
CORPORATE SOURCE: Department of Biochemistry, University College of Wales, Aberystwyth, Dyfed, Great Britain.
SOURCE: Journal of bacteriology, (1987 Nov) 169 (11) 4972-9. Journal code: 2985120R. ISSN: 0021-9193.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198712
ENTRY DATE: Entered STN: 19900305
Last Updated on STN: 19970203
Entered Medline: 19871209

AB Over 20 gram-positive bacteria were isolated by elective culture with (+/-)-alpha-pinene as the sole carbon source. One of these strains, **Nocardia** sp. strain P18.3, was selected for detailed study. alpha-Pinene-grown cells oxidized, without lag, alpha-pinene, alpha-pinene oxide (epoxide), and the cis and trans isomers of 2-methyl-5-isopropylhexa-2,5-dienal. No other tested terpene was oxidized at a significant rate. alpha-Pinene was not metabolized by cell extracts in the presence or absence of NADH or NADPH. Cell extracts catalyzed a rapid decyclization of alpha-pinene oxide, in the absence of added cofactors, with the formation of cis-2-methyl-5-isopropylhexa-2,5-dienal. Further oxidation of the aldehyde to the corresponding acid occurred in the presence of NAD. Both activities were induced by growth with alpha-pinene. A rapid, nonenzymic transformation of the cis aldehyde into the trans isomer occurred in glycine buffer. The trans isomer was also a substrate for the NAD-linked aldehyde dehydrogenase. The distribution of the alpha-pinene oxide lyase in alpha-pinene-utilizing Pseudomonas spp. was also investigated and was compatible with the two alternative ring-cleavage sequences that have been proposed on the basis of accumulated metabolites.

L8 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 3
ACCESSION NUMBER: 1988:34622 CAPLUS
DOCUMENT NUMBER: 108:34622
TITLE: Oxidation of gaseous and volatile hydrocarbons by selected alkene-utilizing bacteria
AUTHOR(S): Van Ginkel, C. G.; Welten, H. G. J.; De Bont, J. A. M.
CORPORATE SOURCE: Dep. Microbiol., Agric. Univ., Wageningen, 6703 CT, Neth.
SOURCE: Applied and Environmental Microbiology (1987), 53(12), 2903-7
CODEN: AEMIDF; ISSN: 0099-2240
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Eleven strains of alkene-utilizing Mycobacterium, **Nocardia**, and Xanthobacter were tested for their ability to growt with C1-C6 alkanes, C2-C6 alkenes, alkadienes, and **monoterpenes** furnished individually as sole sources of C and energy in a mineral salts medium. A limited no. of alkenes and alkanes supported growth of the bacteria; some bacteria were unable to grow on any of the satd. hydrocarbons tested. **Monoterpenes** were frequently used as C and energy sources by alkene-utilizing Mycobacterium and **Nocardia**. Washed cell suspensions of alkene-grown bacteria attacked the whole range of alkenes tested, whereas only 3 strains oxidized alkanes as well. The alkenes were oxidized either to H2O and CO2 or to epoxyalkanes. Few epoxides accumulated in stoichiometric amts. from the corresponding alkenes, because most epoxides formed were further converted to other compds. like alkanediols.

=> s arthrobacter and monoterpene
TOTAL FOR ALL FILES
L15 5 ARTHROBACTER AND MONOTERPENE

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PROCESSING COMPLETED FOR L15
L16 2 DUP REM L15 (3 DUPLICATES REMOVED)

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L16 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 1
ACCESSION NUMBER: 2000:71177 CAPLUS
DOCUMENT NUMBER: 132:262475
TITLE: Induction by carvone of the polychlorinated biphenyl (PCB)-degradative pathway in Alcaligenes eutrophus H850 and its molecular monitoring
AUTHOR(S): Park, Young-In; So, Jae-Seong; Koh, Sung-Cheol
CORPORATE SOURCE: Division of Civil and Environmental Engineering, Korea Maritime University, Pusan, 606-791, S. Korea
SOURCE: Journal of Microbiology and Biotechnology (1999), 9(6), 804-810
CODEN: JOMBES; ISSN: 1017-7825
PUBLISHER: Korean Society for Applied Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 2 OF 2 MEDLINE on STN
ACCESSION NUMBER: 97288083 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9143124
TITLE: Plant compounds that induce polychlorinated biphenyl biodegradation by **Arthrobacter** sp. strain B1B.
AUTHOR: Gilbert E S; Crowley D E
CORPORATE SOURCE: Environmental Toxicology Graduate Program, University of California, Riverside 92521, USA.
SOURCE: Applied and environmental microbiology, (1997 May) 63 (5) 1933-8.
Journal code: 7605801. ISSN: 0099-2240.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199706
ENTRY DATE: Entered STN: 19970620
Last Updated on STN: 19970620
Entered Medline: 19970612

=> s rhodopseudomonas and monoterpene
TOTAL FOR ALL FILES
L23 1 RHODOPSEUDOMONAS AND MONOTERPENE

=> s pseudomonas and monoterpene

TOTAL FOR ALL FILES
L30 184 PSEUDOMONAS AND MONOTERPENE

=> d l23 ibib abs

L23 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1986:566987 CAPLUS
DOCUMENT NUMBER: 105:166987
TITLE: Action of terpenoids on energy metabolism
AUTHOR(S): Knobloch, K.; Weigand, H.; Weis, N.; Schwarm, H. M.; Vigenschow, H.
CORPORATE SOURCE: Inst. Bot. Pharm. Biol., Univ. Erlangen-Nuernberg, Erlangen, D-8520, Fed. Rep. Ger.
SOURCE: Prog. Essent. Oil Res., Proc. Int. Symp. Essent. Oils, 16th (1986), Meeting Date 1985, 429-45. Editor(s): Brunke, Ernst-Joachim. de Gruyter: Berlin, Fed. Rep. Ger.
CODEN: 55BIAR
DOCUMENT TYPE: Conference

LANGUAGE: English
AB Twenty-five terpenoids (essential oils) were shown to inhibit respiration and phosphorylation by dark-grown **Rhodopseudomonas** sphaeroides membrane prepns. and intact cells. The terpenoids [final concn. 5 mM (0.1%)] penetrated the cell wall and dissolved within the membrane. In general, no significant difference was obsd. in the inhibitor rates of whale cells or membrane prepns. The most potent inhibitors were thymol, carvacrol, and other alc. terpenoids; **monoterpene** hydrocarbons were the least inhibitory. These data confirm the bactericidal action of terpenoids; applications in food preservation and dietary limits are discussed.

=> s l30 not 2001-2004/py
TOTAL FOR ALL FILES
L37 112 L30 NOT 2001-2004/PY

=> dup rem l37
PROCESSING COMPLETED FOR L37
L38 71 DUP REM L37 (41 DUPLICATES REMOVED)

=> d ibib abs 1-71

L38 ANSWER 1 OF 71 MEDLINE on STN
ACCESSION NUMBER: 2001256967 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11210129
TITLE: Identification of a compound in Chamaecyparis taiwanensis inhibiting the ice-nucleating activity of **Pseudomonas** fluorescens KUIN-1.
AUTHOR: Kawahara H; Masuda K; Obata H
CORPORATE SOURCE: Department of Biotechnology, Faculty of Engineering, Kansai University, Suita, Osaka, Japan.. kawahara@ipcku.kansai-u.ac.jp
SOURCE: Bioscience, biotechnology, and biochemistry, (2000 Dec) 64 (12) 2651-6.
Journal code: 9205717. ISSN: 0916-8451.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200105
ENTRY DATE: Entered STN: 20010521
Last Updated on STN: 20010521
Entered Medline: 20010517
AB Inactivation of the ice-nucleating activity of **Pseudomonas** fluorescens KUIN-1 by compounds in the leaves from coniferous trees were investigated, and the inactivated material was identified. Intact cells of the strain KUIN-1 and the acetone or methanol extracts of leaves of various coniferous trees were allowed to react for 30 min at 18 degrees C. Antinucleation compounds were obtained from Chamaecyparis taiwanensis. When the acetone extract from the leaves of coniferous trees was added to the cell suspension (about 10(6) cells/ml) in 50 mM potassium phosphate buffer (pH 7.0), the ice nucleating temperature, T50, was significantly decreased (T50 < -5 degrees C). This inhibitor was isolated by using TLC, then identified as hinokitiol based on UV-VIS, IR, and mass spectral data. When intact cells of the strain KUIN-1 were incubated with hinokitiol, limonene, and alpha-pinene of the principal constituent of the leaves of coniferous trees in 50 mM potassium phosphate buffer (pH 7.0), the ice-nucleating activity decreased, but not in alpha-terpinene. Furthermore, the ice-nucleating activities from other ice-nucleating bacteria also decreased in the presence of hinokitiol. This inhibition was proportional to the concentration of hinokitinol. The pH and thermal stabilities of the ice-nucleating activity of the cells were changed by the addition of hinokitiol (10 mM).

L38 ANSWER 2 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:812138 CAPLUS
DOCUMENT NUMBER: 134:54072
TITLE: Bacterial colonization of phyllosphere of Mediterranean aromatic plants
AUTHOR(S): Karamanoli, K.; Vokou, D.; Menkissoglu, U.;

Constantinidou, H.-I.
CORPORATE SOURCE: Laboratory of Agricultural Chemistry, School of Agriculture, Aristotle University, Thessaloniki, GR-54 006, Greece
SOURCE: Journal of Chemical Ecology (2000), 26(9), 2035-2048
CODEN: JCECD8; ISSN: 0098-0331
PUBLISHER: Kluwer Academic/Plenum Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The influence of secondary metabolites on the bacterial colonization of the phyllosphere of four arom. species of the Mediterranean region was studied for the detn. of total bacterial populations (TBP) and populations of ice nucleation active bacteria (INA). The arom. plants used were lavender (Lavandula angustifolia), rosemary (Rosmarinus officinalis), Greek sage (Salvia fruticosa), and Greek oregano (Origanum vulgare subsp. hirtum), all growing in neighboring sites. Lavender was heavily colonized by bacteria, whereas rosemary, sage, and oregano were poorly colonized. The differences in bacterial colonization were related to the plants' content of secondary metabolites and their antimicrobial activity, as recorded in the in vitro bioassays. Lavender had the lowest amt. of surface phenolics, the lowest concn. of essential oil, and the overall weakest antibacterial activity. Among the epiphytic bacteria, ice nucleation active ones were not detected on oregano and sage leaves but were found in extremely low nos. on those of rosemary and lavender. For this reason, these arom. plants were further studied regarding their effect against two INA bacteria, **Pseudomonas** syringae and Erwinia herbicola. Min. inhibitory concns. and min. bactericidal concns. were estd. for the essential oils and for their main constituents under different bacterial populations. The antibacterial effect of Labiatae arom. plants against INA bacteria not only explains the scare presence of the latter on their leaves but may have applications in agriculture as a frost-control method for sensitive crops.

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 3 OF 71 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 2000:402802 SCISEARCH
THE GENUINE ARTICLE: 316VA
TITLE: Purification and characterization of a Baeyer-Villiger mono-oxygenase from Rhodococcus erythropolis DCL14 involved in three different monocyclic **monoterpene** degradation pathways
AUTHOR: vanderWerf M J (Reprint)
CORPORATE SOURCE: TNO VOEDING, DEPT APPL MICROBIOL & GENE TECHNOL, POB 3600, NL-3700 AJ ZEIST, NETHERLANDS (Reprint); WAGENINGEN UNIV AGR, DEPT FOOD TECHNOL & NUTR SCI, DIV IND MICROBIOL, NL-6700 EV WAGENINGEN, NETHERLANDS
COUNTRY OF AUTHOR: NETHERLANDS
SOURCE: BIOCHEMICAL JOURNAL, (1 MAY 2000) Vol. 347, Part 3, pp. 693-701.
Publisher: PORTLAND PRESS, 59 PORTLAND PLACE, LONDON W1N 3AJ, ENGLAND.
ISSN: 0264-6021.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: English
REFERENCE COUNT: 33
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB A Baeyer-Villiger mono-oxygenase (BVMO), catalysing the NADPH- and oxygen-dependent oxidation of the monocyclic **monoterpene** ketones 1-hydroxy-2-oxolimonene, dihydrocarvone and menthone, was purified to homogeneity from Rhodococcus erythropolis DCL14. Monocyclic **monoterpene** ketone mono-oxygenase (MMKMO) is a monomeric enzyme of molecular mass 60 kDa. It contains 1 mol of FAD/monomer as the prosthetic group. The N-terminal amino acid sequence showed homology with many other NADPH-dependent and FAD-containing (Type 1) BVMOs. Maximal enzyme activity was measured at pH 9 and 35 degrees C. MMKMO has a broad substrate specificity, catalysing the lactonization of a large number of monocyclic **monoterpene** ketones and substituted cyclohexanones. The natural substrates 1-hydroxy-2-oxolimonene, dihydrocarvone and menthone were converted stoichiometrically into 3-isopropenyl-6-oxoheptanoate (the

spontaneous rearrangement product of the lactone formed by MMKMO), 4-isopropenyl-7-methyl-2-oxo-oxepanone and 7-isopropyt-4-methyl-2-oxo-oxepanone respectively. The MMKMO-catalysed conversion of iso-dihydrocarvone showed an opposite regioselectivity to that of dihydrocarvone; in this case, 6-isopropenyl-3-methyl-2-oxo-oxepanone was formed as the product. MMKMO converted all enantiomers of the natural substrates with almost equal efficiency. MMKMO is involved in the conversion of the monocyclic **monoterpene** ketone intermediates formed in the degradation pathways of all stereoisomers of three different monocyclic **monoterpenes**, i.e. limonene, (dihydro)carveol and menthol.

L38 ANSWER 4 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:812014 CAPLUS
DOCUMENT NUMBER: 134:53922
TITLE: Composition and antimicrobial activity of the essential oil of Scutellaria albida ssp. albida from Greece
AUTHOR(S): Skaltsa, Helen D.; Lazari, Diamanto M.; Mavromati, Anna S.; Tiligada, Ekaterini A.; Constantinidis, Theophanis A.
CORPORATE SOURCE: Division of Pharmacognosy, School of Pharmacy, University of Athens, Athens, GR-157 71, Greece
SOURCE: Planta Medica (2000), 66(7), 672-674
CODEN: PLMEAA; ISSN: 0032-0943
PUBLISHER: Georg Thieme Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Steam distd. essential oil from aerial parts of Scutellaria albida ssp. albida was analyzed by GC and GC/MS. Fifteen compds. were identified of which linalool (52.63%) and trans-nerolidol (9.03%) were the major constituents. Furthermore, the oil was tested against four bacteria and two yeasts and was found to be moderately active against all microorganisms tested.
REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 5 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:812013 CAPLUS
DOCUMENT NUMBER: 134:68797
TITLE: Essential oil of Phlomis lanata growing in Greece: chemical composition and antimicrobial activity
AUTHOR(S): Couladis, Maria; Tanimanidis, Andromachi; Tzakou, Olga; Chinou, Ioanna B.; Harvala, Catherine
CORPORATE SOURCE: Department of Pharmacognosy, School of Pharmacy, University of Athens, Athens, 157 71, Greece
SOURCE: Planta Medica (2000), 66(7), 670-672
CODEN: PLMEAA; ISSN: 0032-0943
PUBLISHER: Georg Thieme Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The essential oil obtained from the aerial parts of Phlomis lanata has been analyzed by GC/MS. Forty-eight compds. representing 96.85% of the oil were identified; .alpha.-pinene, limonene and trans-caryophyllene were found as its main components. The essential oil showed a moderate in vitro activity against six Gram (.+-.) bacteria and a stronger one against the three tested pathogenic fungi.
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 6 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:717634 CAPLUS
DOCUMENT NUMBER: 134:357465
TITLE: Chemical composition and antimicrobial activity of the essential oil of Artemisia lobelii All
AUTHOR(S): Stojanovic, Gordana; Palic, Radosav; Mitrovic, Jasmina; Djokovic, Dejan
CORPORATE SOURCE: Department of Chemistry, Faculty of Science, Serbia, 18000, Yugoslavia
SOURCE: Journal of Essential Oil Research (2000), 12(5), 621-624

CODEN: JEOREG; ISSN: 1041-2905
PUBLISHER: Allured Publishing Corp.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The compn. of the essential oil of the aerial parts of Artemisia lobelii during four stages of the growing cycle (full foliation stage, pre-bloom, full bloom and post-bloom stage; between June and Oct.) were studied by GC/MS. The oil was characterized by the high content of **monoterpenes** (73.3-95.7%) and oxidized terpenes (90.8-98.4%). The major constituents of the oil were camphor (33.2-36.8%), 1,8-cineole (15.2-21.1%) and artemisia ketone (6.0-24.2%). The antimicrobial activity of oil against Escherichia coli, Klebsiella pneumoniae, **Pseudomonas** aeruginosa and Staphylococcus aureus was investigated. It was found that the oil showed strong activity against **Pseudomonas** aeruginosa.
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 7 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:554437 CAPLUS
DOCUMENT NUMBER: 136:101280
TITLE: Terpenes and amino acids - progenitors of volatile flavors in microbial transformation reactions
AUTHOR(S): Berger, R. G.; Latza, E.; Neuser, F.; Onken, J.
CORPORATE SOURCE: Institut fur Lebensmittelchemie im Zentrum Angewandte Chemie der, Hannover, 30453, Germany
SOURCE: Frontiers of Flavour Science, [Proceedings of the Weurman Flavour Research Symposium], 9th, Freising, Germany, June 22-25, 1999 (2000), Meeting Date 1999, 394-399. Editor(s): Schieberle, Peter; Engel, Karl-Heinz. Deutsche Forschungsanstalt fuer Lebensmittelchemie: Garching, Germany.
CODEN: 69BOX5
DOCUMENT TYPE: Conference; General Review
LANGUAGE: English
AB A review with refs. The conversion of citronellol by Cystoderma carcharias gave 3,7-dimethyl-1,6,7-octane-triol and dimethyl-octadiols. Microbial formation of rose oxide was also found. Growth and formation of volatiles was effective in a bioreactor with fed-batch operation and aeration by a microporous PP-capillary membrane. The catabolism of .alpha.-pinene by a **Pseudomonas** sp. yielded novalic compds. through a double ring-fission of the substrate. An appropriate lay-out of the bioprocess was designed and resulted in **monoterpene** yields of >50 g/L within 5 h. In situ adsorption of products provided a key element in optimizing this bioprocess. A strain of Zygosaccharomyces converted amino acids into .alpha.-hydroxyketones. 3-Hydroxy-4-phenylbutan-2-one and 3-hydroxy-1-phenylbutan-2-one were identified as metabolites from L-phenylalanine. The latter isomer was isolated for the 1st time from a natural source. The isolated key enzyme, a pyruvate decarboxylase (E.C. 4.1.1.1), transformed aliph. 2-oxo acids and aldehydes.
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 8 OF 71 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 2000075013 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10606597
TITLE: Chemoenzymatic synthesis of homochiral (R)- and (S)-karahanaenol from (R)-limonene.
AUTHOR: Roy A
CORPORATE SOURCE: Plantation Products and Flavor Technology Discipline, Central Food Technological Research Institute, Mysore 570 013, India.
SOURCE: Journal of agricultural and food chemistry, (1999 Dec) 47 (12) 5209-10.
Journal code: 0374755. ISSN: 0021-8561.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200004

ENTRY DATE: Entered STN: 20000421
Last Updated on STN: 20000421
Entered Medline: 20000411

AB Terpinolene oxide, a **monoterpene** belonging to the p-menthane group, is easily derived from naturally abundant (R)-limonene. It was isomerized with montmorillonite clay catalyst to karahanaenone (2,2, 5-trimethylcyclohept-4-en-1-one) by ring enlargement. The enantiomers of the corresponding alcohol, karahanaenol (2,2, 5-trimethylcyclohept-4-en-1-ol), known for their individual organoleptic properties, were resolved through **Pseudomonas** cepacia lipase mediated enantiospecific alcoholysis of its acetate derivative.

L38 ANSWER 9 OF 71 MEDLINE on STN
ACCESSION NUMBER: 1999357684 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10427075
TITLE: The branched-chain dodecylbenzene sulfonate degradation pathway of **Pseudomonas** aeruginosa W51D involves a novel route for degradation of the surfactant lateral alkyl chain.
AUTHOR: Campos-Garcia J; Esteve A; Vazquez-Duhalt R; Ramos J L; Soberon-Chavez G
CORPORATE SOURCE: Departamento de Microbiologia, Instituto de Biotecnologia, Universidad Nacional Autonoma de Mexico, Cuernavaca, Morelos 62251, Mexico.
SOURCE: Applied and environmental microbiology, (1999 Aug) 65 (8) 3730-4.
Journal code: 7605801. ISSN: 0099-2240.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199909
ENTRY DATE: Entered STN: 19990925
Last Updated on STN: 19990925
Entered Medline: 19990915

AB **Pseudomonas** aeruginosa W51D is able to grow by using branched-chain dodecylbenzene sulfonates (B-DBS) or the terpenic alcohol citronellol as a sole source of carbon. A mutant derived from this strain (W51M1) is unable to degrade citronellol but still grows on B-DBS, showing that the citronellol degradation route is not the main pathway involved in the degradation of the surfactant alkyl moiety. The structures of the main B-DBS isomers and of some intermediates were identified by gas chromatography-mass spectrometric analysis, and a possible catabolic route is proposed.

L38 ANSWER 10 OF 71 MEDLINE on STN
ACCESSION NUMBER: 1999318637 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10388678
TITLE: Identification and sequencing of beta-myrcene catabolism genes from **Pseudomonas** sp. strain M1.
AUTHOR: Iurescia S; Marconi A M; Tofani D; Gambacorta A; Paterno A; Devirgiliis C; van der Werf M J; Zennaro E
CORPORATE SOURCE: Department of Biology, University of Rome Three, Rome, Italy.
SOURCE: Applied and environmental microbiology, (1999 Jul) 65 (7) 2871-6.
Journal code: 7605801. ISSN: 0099-2240.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AF112883
ENTRY MONTH: 199909
ENTRY DATE: Entered STN: 19991005
Last Updated on STN: 19991005
Entered Medline: 19990917

AB The M1 strain, able to grow on beta-myrcene as the sole carbon and energy source, was isolated by an enrichment culture and identified as a **Pseudomonas** sp. One beta-myrcene-negative mutant, called N22, obtained by transposon mutagenesis, accumulated (E)-2-methyl-6-methylen-2,7-octadien-1-ol (or myrcen-8-ol) as a unique beta-myrcene

biotransformation product. This compound was identified by gas chromatography-mass spectrometry. We cloned and sequenced the DNA regions flanking the transposon and used these fragments to identify the M1 genomic library clones containing the wild-type copy of the interrupted gene. One of the selected cosmids, containing a 22-kb genomic insert, was able to complement the N22 mutant for growth on beta-myrcene. A 5,370-bp-long sequence spanning the region interrupted by the transposon in the mutant was determined. We identified four open reading frames, named myrA, myrB, myrC, and myrD, which can potentially code for an aldehyde dehydrogenase, an alcohol dehydrogenase, an acyl-coenzyme A (CoA) synthetase, and an enoyl-CoA hydratase, respectively. myrA, myrB, and myrC are likely organized in an operon, since they are separated by only 19 and 36 nucleotides (nt), respectively, and no promoter-like sequences have been found in these regions. The myrD gene starts 224 nt upstream of myrA and is divergently transcribed. The myrB sequence was found to be completely identical to the one flanking the transposon in the mutant. Therefore, we could ascertain that the transposon had been inserted inside the myrB gene, in complete agreement with the accumulation of (E)-2-methyl-6-methylen-2,7-octadien-1-ol by the mutant. Based on sequence and biotransformation data, we propose a pathway for beta-myrcene catabolism in **Pseudomonas** sp. strain M1.

L38 ANSWER 11 OF 71 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 2000:18399 SCISEARCH
THE GENUINE ARTICLE: 268ZD
TITLE: A new antibacterial sesquiterpene glycoside and other bioactive compounds from Biebersteinia heterostemon
AUTHOR: Meng J C; Lu H; Li H; Yang L; Tan R X (Reprint)
CORPORATE SOURCE: NANJING UNIV, DEPT BIOL SCI & TECHNOL, NATL LAB PHARMACEUT BIOTECHNOL, NANJING 210093, PEOPLES R CHINA (Reprint); NANJING UNIV, DEPT BIOL SCI & TECHNOL, NATL LAB PHARMACEUT BIOTECHNOL, NANJING 210093, PEOPLES R CHINA; LANZHOU UNIV, NATL LAB APPL ORGAN CHEM, LANZHOU 730000, PEOPLES R CHINA
COUNTRY OF AUTHOR: PEOPLES R CHINA
SOURCE: SPECTROSCOPY LETTERS, (MAR-APR 1999) Vol. 32, No. 6, pp. 1005-1012.
Publisher: MARCEL DEKKER INC, 270 MADISON AVE, NEW YORK, NY 10016.
ISSN: 0038-7010.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS
LANGUAGE: English
REFERENCE COUNT: 15
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB In addition to the plant sterols beta-sitosterol and daucosterol, a new bisabolane-typed sesquiterpene glycoside and three bioactive compounds (artemetin, geniposide and 6 beta-hydroxygeniposide) were characterized from the whole plant of Biebersteinia heterostemon endemic to the Tibetan area. The structure determination of the novel glycoside and identification of the known phytochemicals were accomplished by a combination of modem spectroscopic methods. Tests of all isolates for the antimicrobial activity indicated that the new sesquiterpene glycoside exhibited pronounced antibacterial activities against Bacillus subtilis, Staphylococcus aureus and **Pseudomonas** sp. with MICs at 50, 50 and 70 mu g/ml, respectively.

L38 ANSWER 12 OF 71 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2000:104215 BIOSIS
DOCUMENT NUMBER: PREV200000104215
TITLE: Induction by carvone of the polychlorinated biphenyl (PCB)-degradative pathway in Alcaligenes eutrophus H850 and its molecular monitoring.
AUTHOR(S): Park, Young-In; So, Jae-Seong; Koh, Sung-Cheol [Reprint author]
CORPORATE SOURCE: Division of Civil and Environmental Engineering, Korea Maritime University, Pusan, 606-791, South Korea
SOURCE: Journal of Microbiology and Biotechnology, (Dec., 1999) Vol. 9, No. 6, pp. 804-810. print.
ISSN: 1017-7825.
DOCUMENT TYPE: Article
LANGUAGE: English

ENTRY DATE: Entered STN: 22 Mar 2000
Last Updated on STN: 3 Jan 2002

AB There is a possibility that carvone, a **monoterpene** from spearmint (Mentha spicata), could induce the bph degradative pathway and genes in Alcaligenes eutrophus H850, which is a known Gram-negative PCB degrader with a broad substrate specificity that was thoroughly investigated with Arthrobacter sp. B1B, a Gram-positive PCB degrader. The strains BIB and H850 were unable to utilize and grow on the plant terpene ((R)-(-)-carvone) (50 ppm) to be recognized as a sole carbon source. Nevertheless, the carvone did induce 2,3-dihydroxybiphenyl 1,2-dioxygenase (encoded by bphC) in the strain B1B, as observed by a resting cell assay that monitors accumulation of a yellow meta ring fission product from 4,4'-dichlorobiphenyl (DCBp). The **monoterpene**, however, did not appear to induce the meta cleavage pathway in the strain H850. Instead, an assumption was made that the strain might be using an alternative pathway, probably the ortho-cleavage pathway. A reverse transcription (RT)-PCR system, utilizing primers designed from a conserved region of the bphC gene of Arthrobacter sp. M5, was employed to verify the occurrence of the alternative pathway. A successful amplification (182 bp) of mRNA transcribed from the N-terminal region of the bphC gene was accomplished in H850 cells induced by carvone (50 ppm) as well as in biphenyl-growth cells. It is, therefore, likely that H850 possesses a specific PCB degradation pathway and hence a different substrate specificity compared with BIB. This study will contribute to an elucidation of the dynamic aspects of PCB bioremediation in terms of roles played by PCB degraders and plant terpenes as natural inducer substrates that are ubiquitous and environmentally compatible.

L38 ANSWER 13 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:286534 CAPLUS
DOCUMENT NUMBER: 131:102406
TITLE: Synthesis of some new benzylic ethers from 1,8-cineole with antimicrobial activity
AUTHOR(S): Silvestre, Armando J. D.; Cavaleiro, Jose A. S.; Feio, Sonia S.; Roseiro, Jose C.; Delmond, Bernard; Filliatre, Claude
CORPORATE SOURCE: Department Chemistry, University Aveiro, Aveiro, P-3810, Port.
SOURCE: Monatshefte fuer Chemie (1999), 130(4), 589-595
CODEN: MOCMB7; ISSN: 0026-9247
PUBLISHER: Springer-Verlag Wien
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 131:102406

AB The synthesis and structural characterization of several benzylic derivs. of 3-exo-hydroxy-1,8-cineole was accomplished. The new compds. show antimicrobial activity against Cladosporium cucumerinum, Staphylococcus aureus, Mycobacterium smegmatis, **Pseudomonas** aeruginosa, and Candida albicans.

REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 14 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:733316 CAPLUS
DOCUMENT NUMBER: 132:93482
TITLE: The role of structure and molecular properties of terpenoids in determining their antimicrobial activity
AUTHOR(S): Griffin, Shane G.; Wyllie, S. Grant; Markham, Julie L.; Leach, David N.
CORPORATE SOURCE: Centre For Biostructural and Biomolecular Research, University of Western Sydney Hawkesbury, Richmond, 2753, Australia
SOURCE: Flavour and Fragrance Journal (1999), 14(5), 322-332
CODEN: FFJOED; ISSN: 0882-5734
PUBLISHER: John Wiley & Sons Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The min. inhibitory concns. (MIC) of 60 terpenoids against **Pseudomonas** aeruginosa, Escherichia coli, Staphylococcus aureus and Candida albicans have been detd. Hierarchical cluster anal. was used to group the compds. into five groups according to their activity patterns

against the four microorganisms. K-Means cluster anal. was then used to confirm these groupings and to show the differences in the activity patterns of the groups. Ten mol. properties of the terpenoids, either calcd. via mol. modeling or detd. by direct measurement, were then used as variables in a forward stepwise discriminant anal. to identify which variables discriminated between groups. Low water soly. of Group IV compds., mainly hydrocarbons and acetates, was found to be assocd. with their relative inactivity. The remaining groups, all contg. oxygenated terpenoids, showed characteristic but distinct activity patterns towards the four test organisms. Hydrogen bonding parameters were found to be assocd. with antimicrobial activity in all cases. Activity against Gram-neg. E. coli and P. aeruginosa was assocd. with a combination of a hydrogen bonding and size parameters. This was not found to be the case for the Gram-pos. S. aureus or the yeast C. albicans.

REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 15 OF 71 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 1999:829159 SCISEARCH
THE GENUINE ARTICLE: 249LB
TITLE: Anaerobic oxidation of the aromatic plant hydrocarbon p-cymene by newly isolated denitrifying bacteria
AUTHOR: Harms G; Rabus R; Widdel F (Reprint)
CORPORATE SOURCE: MAX PLANCK INST MARINE MIKROBIOL, CELSIUSSTR 1, D-28359 BREMEN, GERMANY (Reprint); MAX PLANCK INST MARINE MIKROBIOL, D-28359 BREMEN, GERMANY
COUNTRY OF AUTHOR: GERMANY
SOURCE: ARCHIVES OF MICROBIOLOGY, (NOV 1999) Vol. 172, No. 5, pp. 303-312.
Publisher: SPRINGER VERLAG, 175 FIFTH AVE, NEW YORK, NY 10010.
ISSN: 0302-8933.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: English
REFERENCE COUNT: 46

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The capability of nitrate-reducing bacteria to degrade alkyltoluenes in the absence of molecular oxygen was investigated with the three isomers of xylene, ethyl toluene, and isopropyltoluene (cymene) in enrichment cultures inoculated with freshwater mud. Denitrifying enrichment cultures developed most readily (within 4 weeks) with p-cymene, a natural aromatic hydrocarbon occurring in plants, and with In-xylene (within 6 weeks). Enrichment of denitrifiers that utilized m-ethyltoluene and p-ethyltoluene was slow (within 8 and 12 weeks, respectively); no enrichment cultures were obtained with the other alkylbenzenes within 6 months. Anaerobic degradation of p-cymene, which has not been reported before, was studied in more detail. Two new types of denitrifying bacteria with oval cells, strains pCyN1 and pCyN2, were isolated; they grew on p-cymene (diluted in an inert carrier phase) and nitrate with doubling rimes of 12 and 16 h, respectively. Strain pCyN1, but not strain pCyN2, also utilized p-ethyltoluene and toluene. Both strains grew with some alkenoic **monoterpenes** structurally related to p-cymene, e.g., alpha-terpinene. In addition, the isolates utilized p-isopropylbenzoate, and mono- and dicarboxylic aliphatic acids. Determination of the degradation balance of p-cymene and growth with acetate and nitrate indicated the capacity for complete oxidation of organic substrates under anoxic conditions. Adaptation studies with cells of strain pCyN1 suggest the existence of at least two enzyme systems for anaerobic alkylbenzene utilization, one metabolizing p-cymene and p-ethyltoluene, and the other metabolizing toluene. Excretion of p-isopropylbenzoate during growth on p-cymene indicated that the methyl group is the site of initial enzymatic attack. Although both strains were facultatively aerobic, as revealed by growth on acetate under air, growth on p-cymene under oxic conditions was observed only with strain pCyN1. Strains pCyN1 and pCyN2 are closely related to members of the Azoarcus-Thauera cluster within the beta-subclass of the Proteobacteria, as revealed by 16S rRNA gene sequence analysis. This cluster encompasses several described denitrifiers that oxidize toluene and other alkylbenzenes.

L38 ANSWER 16 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 2

ACCESSION NUMBER: 1999:447152 CAPLUS
DOCUMENT NUMBER: 131:133670
TITLE: Characterization of Alpha-Pinene-Degrading Microorganisms and Application to a Bench-Scale Biofiltration System for VOC Degradation
AUTHOR(S): Kleinheinz, G. T.; Bagley, S. T.; St. John, W. P.; Rughani, J. R.; McGinnis, G. D.
CORPORATE SOURCE: Institute of Wood Research, Michigan Technological University, Houghton, MI, 49931-1295, USA
SOURCE: Archives of Environmental Contamination and Toxicology (1999), 37(2), 151-157
CODEN: AECTCV; ISSN: 0090-4341
PUBLISHER: Springer-Verlag New York Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A study was conducted to isolate and characterize **monoterpene** -degrading microorganisms and apply them to a biofiltration unit to degrade high .alpha.-pinene concns. Soil from a **monoterpene** -polluted site was used with enrichment culture techniques to recover a consortium of bacteria able to utilize .alpha.-pinene as the sole C and energy source. The Biolog system identified the bacteria as **Pseudomonas** fluorescens and Alcaligenes xylosoxidans. Aerobic growth and biodegrdn. studies confirmed that rapid growth and biodegrdn. were being achieved using .alpha.-pinene. Complete degrdn. of .alpha.-pinene was achieved in 36 h with a max. degrdn. rate of 3.9 mg/L-h. Microorganisms placed in a biofiltration column demonstrated good removal of .alpha.-pinene from an air stream at concns. averaging 295 ppmv. A N test was performed and confirmed that .alpha.-pinene removal was due to biol. activity. Given the ability of these microorganisms to utilize high concns. of .alpha.-pinene, they will be used in a coupled treatment system using a physicochem. adsorption/desorption unit coupled to a biofiltration column. Often, biofiltration studies are performed using much lower levels of analyte in the influent air stream; however, the ability of these microorganisms to utilize higher levels of compds. expands the capabilities for future coupled biofiltration systems. During future studies, high flow rates with low levels of analyte will be concd. so that a higher analyte concn. and lower flow rate can be utilized with the biofilter.

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 17 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:460069 CAPLUS
DOCUMENT NUMBER: 131:149040
TITLE: Essential oil of Syzygium cumini (L.) Skeeks (Mirtaceae): chemical composition and antimicrobial activity
AUTHOR(S): Lustosa, Ana Karina Marques; Da Silva, Maria Do Socorro Souza; Cito, Antonia Maria das Gracas Lopes; Dantas Lopes, Jose Arimateia; Chaves, Mariana Helena; De Oliveira, Evaldo Hipolito; De Andrade, Marcus Vinicius Cavalcante; De Lima Filho, Newton Nunes
CORPORATE SOURCE: Departamento de Quimica, Univ. Federal do Piaui, Teresina, PI, 64049-550, Brazil
SOURCE: Anais da Associacao Brasileira de Quimica (1999), 48(2), 95-97
CODEN: AABQAL; ISSN: 0365-0073
PUBLISHER: Associacao Brasileira de Quimica
DOCUMENT TYPE: Journal
LANGUAGE: Portuguese

AB The chem. compn. of the Java plum (S. cumini) essential oil was investigated by NMR. The oil was a mixt. of **monoterpenes**, of which (E)-ocimene, .alpha.-pinene, .beta.-pinene, and mircene were identified as major constituents. The antimicrobial activities of the oil against Escherichia coli, Staphylococcus aureus, and **Pseudomonas** aeruginosa were evaluated.

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 18 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1998:81009 CAPLUS

DOCUMENT NUMBER: 128:150364
TITLE: Biosensor using a cam repressor mutant of **Pseudomonas** putida for detecting musty odor with improved sensitivity
INVENTOR(S): Oikawa, Eisaku; Onuma, Shinichi; Nishino, Tokuzo
PATENT ASSIGNEE(S): Maezawa Kogyo K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10028591	A2	19980203	JP 1997-90222	19970325

PRIORITY APPLN. INFO.: JP 1996-96253 19960326

AB Disclosed is a musty odor biosensor consisting of a cam operon repressor (CamR) mutant of **Pseudomonas** putida for detecting bicyclic **monoterpenes** such as (+)-camphor, 2-methylisoborneol (2-MIB), and borneol with improved sensitivity. It also detects aoko (sic) toxin such as anatoxin a produced by Anabaena flos-aqueae and the odor assocd. with terpenes. It employs a reporter such as luciferase of structure gene C, D, A, B, and E. The CamR mutant exhibits a point mutation in which 58-Tyr is replaced with Cys. Escherichia coli DH5.alpha. transformed with plasmid E49 contg. the CamR mutant, the cam operator/promoter, and Lux operon of Vibrio fischeri was able to detect anatoxin a at the 91 .mu.g/mL level, that was not detectable by its wild-type counter part.

L38 ANSWER 19 OF 71 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 1998:747798 SCISEARCH
THE GENUINE ARTICLE: 122YX
TITLE: Limonene-1,2-epoxide hydrolase from Rhodococcus erythropolis DCL14 belongs to a novel class of epoxide hydrolases
AUTHOR: vanderWerf M J (Reprint); Overkamp K M; deBont J A M
CORPORATE SOURCE: AGR UNIV WAGENINGEN, DEPT FOOD TECHNOL & NUTR SCI, DIV IND MICROBIOL, POB 8129, NL-6700 EV WAGENINGEN, NETHERLANDS (Reprint)
COUNTRY OF AUTHOR: NETHERLANDS
SOURCE: JOURNAL OF BACTERIOLOGY, (OCT 1998) Vol. 180, No. 19, pp. 5052-5057.
Publisher: AMER SOC MICROBIOLOGY, 1325 MASSACHUSETTS AVENUE, NW, WASHINGTON, DC 20005-4171.
ISSN: 0021-9193.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: English
REFERENCE COUNT: 51

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB An epoxide hydrolase from Rhodococcus erythropolis DCL14 I catalyzes the hydrolysis of limonene-1,2-epoxide to limonene-1,2-diol. The enzyme is induced when R. erythropolis is grown on **monoterpenes**, reflecting its role in the limonene degradation pathway of this microorganism. Limonene-1,2-epoxide hydrolase was purified to homogeneity. It is a monomeric cytoplasmic enzyme of 17 kDa, and its N-terminal amino acid sequence was determined. No cofactor was required for activity of this colorless enzyme. Maximal enzyme activity,vas measured at pH 7 and 50 degrees C. None of the tested inhibitors or metal ions inhibited limonene-1,2-epoxide hydrolase activity. Limonene-1,2-epoxide hydrolase has a narrow substrate range. Of the compounds tested, only limonene-1,2-epoxide, 1-methylcyclohexene oxide, cyclohexene oxide, and indene oxide were substrates. This report shows that limonene-1,2-epoxide hydrolase belongs to a new class of epoxide hydrolases based on (i) its low molecular mass, (ii) the absence of any significant homology between the partial amino acid sequence of limonene-1,2-epoxide hydrolase and amino acid sequences of known epoxide hydrolases, (iii) its pH profile, and (iv) the inability of 2-bromo-4'-nitroacetophenone, diethylpyrocarbonate, 4-fluorochalcone oxide, and 1,10-phenanthroline to inhibit limonene-1,2-epoxide hydrolase activity.

L38 ANSWER 20 OF 71 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 1998:947559 SCISEARCH
THE GENUINE ARTICLE: 146PQ
TITLE: Limonene bioconversion to high concentrations of a single and stable product, perillic acid, by a solvent-resistant **Pseudomonas** putida strain
AUTHOR: Speelmans G; Bijlsma A; Eggink G (Reprint)
CORPORATE SOURCE: DLO, AGROTECHNOL RES INST, DEPT IND MICROBIOL, POB 17, NL-6700 AA WAGENINGEN, NETHERLANDS (Reprint); DLO, AGROTECHNOL RES INST, DEPT IND MICROBIOL, NL-6700 AA WAGENINGEN, NETHERLANDS
COUNTRY OF AUTHOR: NETHERLANDS
SOURCE: APPLIED MICROBIOLOGY AND BIOTECHNOLOGY, (NOV 1998) Vol. 50, No. 5, pp. 538-544.
Publisher: SPRINGER VERLAG, 175 FIFTH AVE, NEW YORK, NY 10010.
ISSN: 0175-7598.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE; AGRI
LANGUAGE: English
REFERENCE COUNT: 27

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB A newly isolated solvent-tolerant **Pseudomonas** putida strain converts (+)-limonene to high concentrations of a single and stable product, perillic acid. The presence of a cosubstrate is necessary for growth and perillic acid production. Glycerol appears to be the most suitable cosubstrate among those tested. An optimal combination of 150 mM limonene and 50 mM glycerol was found. Other factors that improve the extent and/or rate of bioconversion are the use of ammonia or urea as the nitrogen source, control of temperature at 30-34 degrees C and of pH at 7.0, as well as the use of emulsifiers to increase the bioavailability of limonene. Up to 18 mM (3.0 g . l(-1)) perillic acid is produced, a concentration that is not growth inhibitory. The observations that a single product is formed in high concentrations and that it is not further metabolized make this limonene bioconversion of commercial interest.

L38 ANSWER 21 OF 71 MEDLINE on STN
ACCESSION NUMBER: 1998231170 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9569711
TITLE: The synergistic preservative effects of the essential oils of sweet basil (Ocimum basilicum L.) against acid-tolerant food microflora.
AUTHOR: Lachowicz K J; Jones G P; Briggs D R; Bienvenu F E; Wan J; Wilcock A; Coventry M J
CORPORATE SOURCE: School of Nutrition and Public Health, Deakin University, Geelong, Australia.
SOURCE: Letters in applied microbiology, (1998 Mar) 26 (3) 209-14.
Journal code: 8510094. ISSN: 0266-8254.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Biotechnology
ENTRY MONTH: 199805
ENTRY DATE: Entered STN: 19980520
Last Updated on STN: 19980520
Entered Medline: 19980514

AB Essential oils extracted by hydrodistillation from five different varieties of Ocimum basilicum L. plants (Anise, Bush, Cinnamon, Dark Opal and a commercial sample of dried basil) were examined for antimicrobial activity against a wide range of foodborne Gram-positive and -negative bacteria, yeasts and moulds by an agar well diffusion method. All five essential oils of basil showed antimicrobial activity against most of the organisms tested with the exception of Flavimonas oryzihabitans and **Pseudomonas** species. The inhibitory effect of Anise oil, in comparison with mixtures of the predominant components of pure linalool and methyl chavicol, against the acid-tolerant organisms, Lactobacillus curvatus and Saccharomyces cerevisiae, was examined in broth by an indirect impedance method. Synergistic effects between Anise oil, low pH (pH 4.2) and salt (5% NaCl) were determined. The antimicrobial effect of Anise oil was also assessed in a tomato juice medium by direct viable count, showing that the growth of Lact. curvatus and S. cerevisiae was

completely inhibited by 0.1% and 1% Anise oil, respectively. The results of the current study indicate the need for further investigations to understand the antimicrobial effects of basil oils in the presence of other food ingredients and preservation parameters.

L38 ANSWER 22 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1998:262690 CAPLUS
DOCUMENT NUMBER: 129:38659
TITLE: Antimicrobial activity of essential oils from Zieria
AUTHOR(S): Griffin, Shane G.; Leach, David N.; Markham, Julie; Johnstone, Richard
CORPORATE SOURCE: Centre for Biostructural and Biomolecular Research, University of Western Sydney Hawkesbury, Richmond, 2753, Australia
SOURCE: Journal of Essential Oil Research (1998), 10(2), 165-174
CODEN: JEOREG; ISSN: 1041-2905
PUBLISHER: Allured Publishing Corp.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Essential oils, extd. from species of the genus Zieria using cold methanol extn., were used to divide the Zieria species into eight groups based on the chem. compns. of their oils using hierarchical cluster anal. The major components of most Zieria oils were oxygenated terpenes or other related compds. including car-3-en-2-one, chrysanthenone, eucarvone, Me eugenol, elemicin and safrole. In several of the Zieria oils the major oxygenated **monoterpene** made up between 50-60% of the oil compn. Measurements of min. inhibitory concn., using an agar diln. method and Escherichia coli, Staphylococcus aureus, **Pseudomonas** aeruginosa and Candida albicans as test organisms, have demonstrated that essential oils from Zieria exhibit antimicrobial activity. Several of the major oxygenated compds. were tested individually and found, in most cases, to be comparable in bioactivity to the oils in which they occurred.
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 23 OF 71 MEDLINE on STN
ACCESSION NUMBER: 1998297286 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9633630
TITLE: The effect of essential oils of basil on the growth of Aeromonas hydrophila and **Pseudomonas** fluorescens.
AUTHOR: Wan J; Wilcock A; Coventry M J
CORPORATE SOURCE: Australian Food Industry Science Centre, Werribee, Victoria, Australia.
SOURCE: Journal of applied microbiology, (1998 Feb) 84 (2) 152-8.
Journal code: 9706280. ISSN: 1364-5072.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199807
ENTRY DATE: Entered STN: 19980723
Last Updated on STN: 19980723
Entered Medline: 19980713
AB Basil essential oils, including basil sweet linalool (BSL) and basil methyl chavicol (BMC), were screened for antimicrobial activity against a range of Gram-positive and Gram-negative bacteria, yeasts and moulds using an agar well diffusion method. Both essential oils showed antimicrobial activity against most of the micro-organisms examined except Clostridium sporogenes, Flavimonas oryzihabitans, and three species of **Pseudomonas**. The minimum inhibitory concentration (MIC) of BMC against Aeromonas hydrophila and **Pseudomonas** fluorescens in TSYE broth (as determined using an indirect impedance method) was 0.125 and 2% (v/v), respectively; the former was not greatly affected by the increase of challenge inoculum from 10(3) to 10(6) cfu ml-1. Results with resting cells demonstrated that BMC was bactericidal to both Aer. hydrophila and Ps. fluorescens. The growth of Aer. hydrophila in filter-sterilized lettuce extract was completely inhibited by 0.1% (v/v) BMC whereas that of Ps. fluorescens was not significantly affected by 1% (v/v) BMC. In addition, the effectiveness of washing fresh lettuce with 0.1 or 1% (v/v) BMC on survival of natural microbial flora was comparable with that

effected by 125 ppm chlorine.

L38 ANSWER 24 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1998:678301 CAPLUS
DOCUMENT NUMBER: 130:78590
TITLE: Phytoconstituents and antimicrobial activity of Melaleuca leucadendron leaf essential oil from Venezuela
AUTHOR(S): Gonzalez de Colmenares, Nelida; Ojeda de Rodriguez, Graciela; Prieto, Avismelsi; Crescente, Oscar; Cabrera, Lilibeth
CORPORATE SOURCE: Centro de Qujimica de Productos Naturales, Univ. Nacional Experimental del Tachira, San Cristobal, Venez.
SOURCE: Ciencia (Maracaibo) (1998), 6(2), 123-128
CODEN: CENCEP; ISSN: 1315-2076
PUBLISHER: Comision Editora de la Revista Ciencia
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The essential oil compn. of Venezuelan Melaleuca leucadendron leaves was detd. The oil was extd. by hydrodistn. and analyzed by HRGC and GC-MS. Among the 44 constituents identified, 1,8-cineole (38.4%), nerolidol (28.7%), alloaromadendrene (14.4%) and .alpha.-terpineol (12.6%) were the most abundant. The 1,8-cineole content was an indication that this essential oil belongs to the chemotype I. The essential oil was active against Bacillus cereus and Staphylococcus aureus, but was inactive against Escherichia coli and **Pseudomonas** aeruginosa. It also showed toxicity in the brine shrimp (Artemia salina) lethality test (LC50 (24 h) = 22.25 .mu.g/mL).
REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 25 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 3
ACCESSION NUMBER: 1998:249117 CAPLUS
DOCUMENT NUMBER: 128:274935
TITLE: Composition and antimicrobial activity of the essential oil of Murraya exotica L
AUTHOR(S): El-Sakhawy, F. S.; El-Tantawy, M. E.; Ross, S. A.; El-Sohly, M. A.
CORPORATE SOURCE: Fac. Pharm., Cairo Univ., Egypt
SOURCE: Flavour and Fragrance Journal (1998), 13(1), 59-62
CODEN: FFJOED; ISSN: 0882-5734
PUBLISHER: John Wiley & Sons Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The essential oils of fresh flowers, leaves and fruits of M. exotica, cultivated in Egypt, were analyzed by GC-MS. Forty-four components were identified in the oils. The **monoterpene** hydrocarbon .alpha.-pinene was the major constituents in all cases. The oils exhibited strong antifungal activity against Candida albicans and showed a modest antibacterial activity against Escherichia coli, **Pseudomonas** aeruginosa, Staphylococcus aureus and Sarcina lutea.
REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 26 OF 71 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1998:437997 BIOSIS
DOCUMENT NUMBER: PREV199800437997
TITLE: A bioactive **monoterpene** ester from Erigeron linifolius (Compositae).
AUTHOR(S): Ragasa, Consolacion Y. [Reprint author]; Sy, Jennifer; Coll, John C.; Rideout, John A.
CORPORATE SOURCE: Chem. Dep., De La Salle Univ., 2401 Taft Ave., Manila 1004, Philippines
SOURCE: Asia Life Sciences, (Jan.-June, 1998) Vol. 7, No. 1, pp. 1-9. print.
ISSN: 0117-3375.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 7 Oct 1998
Last Updated on STN: 5 Nov 1998

AB The chloroform extract of Erigeron linifolius afforded 6-hydroxycarvotanacetone. Its structure was elucidated by 1D and 2D NMR and FT-IR spectroscopy and mass spectrometry. Antimicrobial test on 6-hydroxycarvotanacetone by the agar well method indicated that it is active against Bacillus subtilis, **Pseudomonas** aeruginosa, Candida albicans and Trichophyton mentagrophytes and inactive against Staphylococcus aureus and Escherichia coli. Micronucleus test indicated that the compound is an antimutagen.

L38 ANSWER 27 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1997:654702 CAPLUS
DOCUMENT NUMBER: 127:355922
TITLE: Biosensor using a cam repressor mutant of **Pseudomonas** putida for detecting musty odor with improved sensitivity
INVENTOR(S): Oikawa, Eisaku; Onuma, Shinichi; Nishino, Tokuzo
PATENT ASSIGNEE(S): Maezawa Kogyo K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09252784	A2	19970930	JP 1996-96282	19960326

PRIORITY APPLN. INFO.: JP 1996-96282 19960326

AB Disclosed is a musty odor biosensor consisting of a cam operon repressor (CamR) mutant of **Pseudomonas** putida for detecting bicyclic **monoterpenes** such as (+)-camphor, 2-methylisoborneol (2-MIB), and borneol with improved sensitivity. The CamR mutant exhibits a point mutation in which 90-Tyr is replaced with Cys. Escherichia coli transformed with plasmid F6 contg. the CamR mutant, the cam operator/promoter, and Lux operon of Vibrio fischeri was able to detect 2-MIB at the 10 ng/.mu.L level, 10-fold more sensitive than that of its wild-type counter part.

L38 ANSWER 28 OF 71 MEDLINE on STN
ACCESSION NUMBER: 97294455 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9150211
TITLE: p-Cymene catabolic pathway in **Pseudomonas** putida F1: cloning and characterization of DNA encoding conversion of p-cymene to p-cumate.
AUTHOR: Eaton R W
CORPORATE SOURCE: National Health and Environmental Effects Research Laboratory, U.S. Environmental Protection Agency, Gulf Breeze, Florida 32561, USA.. eaton.richard@epamail.epa.gov
SOURCE: Journal of bacteriology, (1997 May) 179 (10) 3171-80.
Journal code: 2985120R. ISSN: 0021-9193.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-U24215
ENTRY MONTH: 199706
ENTRY DATE: Entered STN: 19970620
Last Updated on STN: 19980206
Entered Medline: 19970609

AB **Pseudomonas** putida F1 utilizes p-cymene (p-isopropyltoluene) by an 11-step pathway through p-cumate (p-isopropylbenzoate) to isobutyrate, pyruvate, and acetyl coenzyme A. The cym operon, encoding the conversion of p-cymene to p-cumate, is located just upstream of the cmt operon, which encodes the further catabolism of p-cumate and is located, in turn, upstream of the tod (toluene catabolism) operon in P. putida F1. The sequences of an 11,236-bp DNA segment carrying the cym operon and a 915-bp DNA segment completing the sequence of the 2,673-bp DNA segment separating the cmt and tod operons have been determined and are discussed here. The cym operon contains six genes in the order cymBCAaAbDE. The gene products have been identified both by functional assays and by comparing deduced amino acid sequences to published sequences. Thus, cymAa and cymAb encode

the two components of p-cymene monooxygenase, a hydroxylase and a reductase, respectively; cymB encodes p-cumic alcohol dehydrogenase; cymC encodes p-cumic aldehyde dehydrogenase; cymD encodes a putative outer membrane protein related to gene products of other aromatic hydrocarbon catabolic operons, but having an unknown function in p-cymene catabolism; and cymE encodes an acetyl coenzyme A synthetase whose role in this pathway is also unknown. Upstream of the cym operon is a regulatory gene, cymR. By using recombinant bacteria carrying either the operator-promoter region of the cym operon or the cmt operon upstream of genes encoding readily assayed enzymes, in the presence or absence of cymR, it was demonstrated that cymR encodes a repressor which controls expression of both the cym and cmt operons and is inducible by p-cumate but not p-cymene. Short (less than 350 bp) homologous DNA segments that are located upstream of cymR and between the cmt and tod operons may have been involved in recombination events that led to the current arrangement of cym, cmt, and tod genes in P. putida F1.

L38 ANSWER 29 OF 71 MEDLINE on STN
ACCESSION NUMBER: 97289661 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9144566
TITLE: Reductase gene sequences and protein structures: p-cymene methyl hydroxylase.
AUTHOR: Dutta T K; Gunsalus I C
CORPORATE SOURCE: NHEERL, Gulf Ecology Division, U.S. EPA, Gulf Breeze, Florida 32561-5299, USA.
SOURCE: Biochemical and biophysical research communications, (1997 Apr 17) 233 (2) 502-6.
Journal code: 0372516. ISSN: 0006-291X.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-U86603
ENTRY MONTH: 199706
ENTRY DATE: Entered STN: 19970612
Last Updated on STN: 19970612
Entered Medline: 19970605
AB Oxygenases are critical to cycling carbon in the biosphere and dependent on reductase action, principally from flavoprotein enzymes. Oxygenase diversity among organisms and strains carries a common theme of protein sequence and folding. p-Cymene (para-isopropyl toluene) was chosen as a point of convergence in terpene-aromatic mineralization to characterize a methyl hydroxylase electron transport system with the aerobe **Pseudomonas** aureofaciens. The cymA hydroxylase reductase gene was isolated and sequenced and the protein primary structure deduced. Optimized amino acid sequence alignments of flavoprotein reductases revealed major similarities over protein length, in the binding domains for NAD(P)H, and the flavine centers of pro- and eukaryote systems.

L38 ANSWER 30 OF 71 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1997:283862 BIOSIS
DOCUMENT NUMBER: PREV199799583065
TITLE: Effect of selected **monoterpenes** on methane oxidation, denitrification and aerobic metabolism in pure culture.
AUTHOR(S): Amaral, J. A.; Ekins, A.; Richards, S. R.; Knowles, R.
CORPORATE SOURCE: McGill Univ., Ste. Anne de Bellevue, PQ, Canada
SOURCE: Abstracts of the General Meeting of the American Society for Microbiology, (1997) Vol. 97, No. 0, pp. 398.
Meeting Info.: 97th General Meeting of the American Society for Microbiology. Miami Beach, Florida, USA. May 4-8, 1997.
ISSN: 1060-2011.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
Conference; (Meeting Poster)
LANGUAGE: English
ENTRY DATE: Entered STN: 3 Jul 1997
Last Updated on STN: 3 Jul 1997

L38 ANSWER 31 OF 71 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1998:367762 BIOSIS

DOCUMENT NUMBER: PREV199800367762
TITLE: Antimicrobial activity of Psoralea glandulosa L.
AUTHOR(S): Erazo, S. [Reprint author]; Gonzalez, V.; Zaldivar, M.; Negrete, R.
CORPORATE SOURCE: Fac. Ciencias Quimicas Farm., Univ. Chile, P.O. Box 233, Santiago 1, Chile
SOURCE: International Journal of Pharmacognosy, (Dec., 1997) Vol. 35, No. 5, pp. 385-387. print.
CODEN: IJPYEW. ISSN: 0925-1618.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 27 Aug 1998
Last Updated on STN: 21 Oct 1998

AB Antimicrobial activity of leaf extracts of Psoralea glandulosa L. (Papilionaceae) is reported. This study was carried out on the extracts and on the plant's most abundant metabolite, bakuchiol. Antimicrobial activity against Gram positive bacteria was observed Bioautographic assays showed that bakuchiol was the compound responsible for this activity.

L38 ANSWER 32 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1997:100561 CAPLUS
DOCUMENT NUMBER: 126:117155
TITLE: Opportunities in microbial biotransformation of **monoterpenes**
AUTHOR(S): Van Der Werf, Mariet J.; De Bont, Jan A.M.; Leak, David J.
CORPORATE SOURCE: Division of Industrial Microbiology, Department of Food Science, Wageningen Agricultural University, Wageningen, 6700 EV, Neth.
SOURCE: Advances in Biochemical Engineering/Biotechnology (1997), 55(Biotechnology of Aroma Compounds), 147-177
CODEN: ABEBDZ; ISSN: 0724-6145
PUBLISHER: Springer
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review with 190 refs. **Monoterpenes** are important flavor and fragrance compds. The biotransformation of **monoterpenes** has been studied quite extensively during the past 30 yr. Specific problems have been encountered during these studies which have prevented the commercialization of **monoterpene** biotransformation processes. The most important problems were the chem. instability of **monoterpenes**, the substrate and product toxicity and the presence of multiple transformation pathways in the microorganisms. Notwithstanding the encountered problems, the area of **monoterpene** biotransformation remains of great potential com. interest to the food and perfume industry. The main advantages of the use of biotechnol. methods for the prodn. of flavors and fragrances are the fact that terpenoids produced in this way can be called natural and the fact that biocatalysts show, in general, a high regio- and stereoselectivity. Information regarding the enzyme systems involved in **monoterpene** biodegrdn., except for the degrdn. of (+)- and (-)- camphor by **Pseudomonas** putida, is rather scarce. However, during the past decade new information has become available on the purifn. and description of several enzymes involved in other **monoterpene** degrdn. pathways. The genetic information encoding some of these enzymes has been cloned and sequenced. In the future, genetic engineering techniques may provide modified strains which can be used for the prodn. of the desired product.

REFERENCE COUNT: 190 THERE ARE 190 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 33 OF 71 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1996:260847 BIOSIS
DOCUMENT NUMBER: PREV199698816976
TITLE: Isolation, characterization, and application of microorganisms recovered from **monoterpene** -contaminated soil.
AUTHOR(S): Kleinheinz, G. T.; Rughani, J. R.; St John, W. P.; Heflin, J. D.; Bagley, S. T.
CORPORATE SOURCE: Mich. Technol. Univ., Houghton, MI, USA
SOURCE: Abstracts of the General Meeting of the American Society

for Microbiology, (1996) Vol. 96, No. 0, pp. 436.
Meeting Info.: 96th General Meeting of the American Society for Microbiology. New Orleans, Louisiana, USA. May 19-23, 1996.
ISSN: 1060-2011.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 31 May 1996
Last Updated on STN: 31 May 1996

L38 ANSWER 34 OF 71 MEDLINE on STN
ACCESSION NUMBER: 96280481 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8693045
TITLE: Comparison of antimicrobial properties of **monoterpenes** and their carbonylated products.
AUTHOR: Naigre R; Kalck P; Roques C; Roux I; Michel G
CORPORATE SOURCE: Laboratoire de Chimie des Procedes, Ecole Nationale Superieure de Chimie de Toulouse, France.
SOURCE: Planta medica, (1996 Jun) 62 (3) 275-7.
Journal code: 0066751. ISSN: 0032-0943.
PUB. COUNTRY: GERMANY: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199608
ENTRY DATE: Entered STN: 19960911
Last Updated on STN: 19960911
Entered Medline: 19960829
AB Some **monoterpenes** and their carbonylated products were evaluated for their antibacterial and antifungal properties. The carbonylation of tested **monoterpenes** was shown to increase the bacteriostatic and fungistatic activities specifically by the contact method. Concerning the killing effects, only (1R,2S,5R)-isopulegol, its carbonylated products, and (R)-carvone showed significant bactericidal activities, particularly against Enterococcus faecium and Escherichia coli above a concentration of 10 microliters/ml. A fungicidal efficiency of (1R,2S,5R)-isopulegol and (R)-carvone against Aspergillus niger was also noted. It seems that the presence of an oxygenated function in the framework increases the antimicrobial properties. However, **monoterpenes** were more active using a micro-atmosphere method.

L38 ANSWER 35 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1997:194072 CAPLUS
DOCUMENT NUMBER: 126:242692
TITLE: Composition and antimicrobial activity of the essential oil of the fruits of Schinus dependens Ort.
AUTHOR(S): El-Sakhawy, F.S.
CORPORATE SOURCE: Department of Pharmacognosy, Faculty of Pharmacy, Cairo University, Kasr El-Ainy, Cairo, 11562, Egypt
SOURCE: Al-Azhar Journal of Pharmaceutical Sciences (1996), 17, 159-170
CODEN: AAJPFT; ISSN: 1110-1644
PUBLISHER: Al-Azhar University, Faculty of Pharmacy
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The essential oil of ripe fruits of Schinus dependens Ort. was obtained by steam-distn. (2.1%). The oil was analyzed by gas chromatog.-mass spectroscopy (GC-MS) technique. Twenty-four components representing 97.91% of the total oil compn. (43 components) were identified. **Monoterpene** hydrocarbons were the most abundant constituents of the oil (74.78%). Among these, limonene (29.71%) constituted the highest percentage followed by .alpha.-phellandrene (21%). In addn. significant amts. of p-cymene, .beta.-pinene, .alpha.-pinene, and myrcene were present. The oil showed pronounced antimicrobial activity against Bacillus subtilis, Staphylococcus aureus, Escherichia coli, **Pseudomonas** aeruginosa, and Klebsiella pneumonia, the oil also exhibited a significant activity against Candida albicans.

L38 ANSWER 36 OF 71 MEDLINE on STN DUPLICATE 4
ACCESSION NUMBER: 96064389 MEDLINE

DOCUMENT NUMBER: PubMed ID: 8526489
TITLE: Microbial degradation of **monoterpenes** in the absence of molecular oxygen.
AUTHOR: Harder J; Probian C
CORPORATE SOURCE: Abteilung Mikrobiologie, Max-Planck-Institut fur Marine Mikrobiologie, Bremen, Germany.
SOURCE: Applied and environmental microbiology, (1995 Nov) 61 (11) 3804-8.
Journal code: 7605801. ISSN: 0099-2240.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199601
ENTRY DATE: Entered STN: 19960219
Last Updated on STN: 19960219
Entered Medline: 19960125

AB Anaerobic degradation of natural **monoterpenes** by microorganisms was evaluated by using **Pseudomonas** citronellolis DSM 50332 and enrichment cultures containing nitrate as an electron acceptor. P. citronellolis grew anaerobically on 3,7-dimethyl-1-octanol and citronellol but not on geraniol, nerol, and alicyclic **monoterpenes**. In contrast, several a-, mono-, and bicyclic **monoterpenes** supported microbial growth and denitrification in enrichment cultures. We found that consumption of linalool, menthol, menth-1-ene, alpha-phellandrene, limonene, 2-carene, alpha-pinene, and fenchone in enrichment cultures depended on the presence of living microorganisms and nitrate. In these experiments, the ratios of number of electrons derived from complete substrate oxidation to number of electrons derived from nitrate reduction ranged from 1.2:1 to 2.9:1. Microbial degradation was accompanied by the formation of small traces of **monoterpenes**, which were characterized by gas chromatography-mass spectroscopy. The formation of geraniol and geranial from linalool suggested that a 3,1-hydroxyl-delta 1-delta 2-mutase reaction initiates linalool degradation. Seven strains of motile, oval to rod-shaped, facultatively denitrifying bacteria were isolated on agar bottle plates by using linalool, menthol, menth-1-ene, alpha-phellandrene, 2-carene, eucalyptol, and alpha-pinene as sole carbon and energy sources.

L38 ANSWER 37 OF 71 MEDLINE on STN
ACCESSION NUMBER: 95050691 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7961838
TITLE: Relationship of active site topology to substrate specificity for cytochrome P450terp (CYP108).
AUTHOR: Fruetel J A; Mackman R L; Peterson J A; Ortiz de Montellano P R
CORPORATE SOURCE: Department of Pharmaceutical Chemistry, School of Pharmacy, University of California, San Francisco 94143-0446.
CONTRACT NUMBER: GM25515 (NIGMS)
GM43479 (NIGMS)
P-30 DK26743 (NIDDK)
+
SOURCE: Journal of biological chemistry, (1994 Nov 18) 269 (46) 28815-21.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199412
ENTRY DATE: Entered STN: 19950110
Last Updated on STN: 19950110
Entered Medline: 19941219

AB Earlier studies have shown that the reactions of cytochrome P450 with arylhydrazines yield aryl-iron complexes, and that oxidative migration of the aryl groups to the pyrrole nitrogens of the heme provides information on the active site topology. Comparison of cytochromes P450terp (CYP108), P450cam (CYP101), and P450BM-3 (CYP102) by this method suggests that the active site of P450terp is effectively more sterically restricted than those of the other two enzymes and is primarily open above pyrrole ring D of the heme group. This experimental model of the P450terp active site

differs from that deduced by x-ray crystallography, which shows that pyrrole ring C is also relatively open. The results suggest that aryl shifts can be used to probe conformations of the active site other than that trapped in the crystal state. Identification of the product formed from alpha-terpineol by P450terp shows that the enzyme exclusively hydroxylates the most sterically accessible, allylically activated position. The enzyme also oxidizes substituted thioanisoles and styrenes unrelated to alpha-terpineol to the corresponding sulfoxides and epoxides. In the case of 4-methylthioanisole and 4-methylstyrene, methyl hydroxylation competes effectively with sulfoxidation and epoxidation in the reaction catalyzed by P450terp but not those catalyzed by P450BM-3 or P450cam. Comparison of the stereoselectively of thioanisole sulfoxidation and styrene epoxidation by P450terp, P450cam, and P450BM-3 shows that P450terp is the most, and P450BM-3 the least, stereospecific. The stereospecificity of thioanisole sulfoxidation by P450terp depends on the electronic nature of the para-substituent and rises from an (R):(S) ratio of 20:80 for p-MeO to a value of < 01:99 for p-CN. The (R):(S) ratio for the epoxides produced by P450terp is approximately 90:10 for the two substituents investigated. Cytochromes P450cam and P450BM-3 are much less stereoselective. A model is suggested by the stereochemical and topological data for the binding of substrates in P450terp.

L38 ANSWER 38 OF 71 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 94:248716 SCISEARCH
THE GENUINE ARTICLE: NH072
TITLE: ASYMMETRIC REDUCTION OF PROCHIRAL KETONES BY CELL-FREE SYSTEMS FROM ALCALIGENES-EUTROPHUS
AUTHOR: MADYASTHA K M (Reprint); GURURAJA T L
CORPORATE SOURCE: INDIAN INST SCI, DEPT ORGAN CHEM, BIOORGAN SECT, BANGALORE 560012, KARNATAKA, INDIA (Reprint)
COUNTRY OF AUTHOR: INDIA
SOURCE: JOURNAL OF CHEMICAL TECHNOLOGY AND BIOTECHNOLOGY, (MAR 1994) Vol. 59, No. 3, pp. 249-255.
ISSN: 0268-2575.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS; AGRI; ENGI
LANGUAGE: ENGLISH
REFERENCE COUNT: 23
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB A strain of Alcaligenes eutrophus has been isolated from the soil by enrichment culture technique with nerolidol (1), a sesquiterpene alcohol, as the sole source of carbon and energy. Fermentation of nerolidol (1) by this bacterium in a mineral salts medium resulted in the formation of two major metabolites, viz. geranylacetone (2) and an optically active alcohol, (S)-(+)-geranylacetol (3). Nerolidol (1)-induced cells readily transformed 1,2-epoxynerolidol (4) and 1,2-dihydroxynerolidol (5) into geranylacetone (2). These cells also exhibited their ability to carry out stereospecific reduction of 2 into (S)-(+)-geranylacetol (3). Oxygen uptake studies clearly indicated that nerolidol-induced cells oxidized compounds 2, 3, 4, 5 and ethyleneglycol (7). Based on the nature of the metabolites isolated, the ability of nerolidol-induced cells to convert compounds 4 and 5 into geranylacetone (2), and oxygen uptake studies, a pathway for the microbial degradation of nerolidol (1) has been proposed. The proposed pathway envisages the epoxidation of the terminal double bond, opening of the epoxide and cleavage between C-2 and C-3 in a manner similar to the periodate oxidation of cis-diol. The cell-free extract prepared from nerolidol-induced cells readily carried out the asymmetric reduction of compound 2 to an optically active alcohol (3) in the presence of NAD(P)H. The cell-free extract carried out both oxidation and reduction reactions at two different pH values and exhibited wide substrate specificity towards various steroids besides terpenes.

L38 ANSWER 39 OF 71 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1994:142466 BIOSIS
DOCUMENT NUMBER: PREV199497155466
TITLE: **Monoterpenes** of natural origin for control of phytoparasitic nematodes.
AUTHOR(S): Soler, A.; Rodriguez-Kabana, R.; Weaver, C. F.; King, P. S.; McInroy, J. A.
CORPORATE SOURCE: Dep. Plant Pathol., Ala. Agric. Exp. Stn., Auburn Univ., AL 36849, USA

SOURCE: Phytopathology, (1993) Vol. 83, No. 12, pp. 1351.
Meeting Info.: Joint Meeting of the American Phytopathological Society and the Society of Nematologists on Plant Pathology Beyond 2000. Nashville, Tennessee, USA. November 6-10, 1993.
CODEN: PHYTAJ. ISSN: 0031-949X.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 30 Mar 1994
Last Updated on STN: 30 Mar 1994

L38 ANSWER 40 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 5
ACCESSION NUMBER: 1993:404970 CAPLUS
DOCUMENT NUMBER: 119:4970
TITLE: Induction and characterization of a cytochrome P-450-dependent camphor hydroxylase in tissue cultures of common sage (Salvia officinalis)
AUTHOR(S): Funk, Christoph; Croteau, Rodney
CORPORATE SOURCE: Inst. Biol. Chem., Washington State Univ., Pullman, WA, 99164-6340, USA
SOURCE: Plant Physiology (1993), 101(4), 1231-7
CODEN: PLPHAY; ISSN: 0032-0889
DOCUMENT TYPE: Journal
LANGUAGE: English
AB (+)-Camphor, a major **monoterpene** of the essential oil of common sage (S. officinalis), is catabolized in senescent tissue, and the pathway for the breakdown of this bicyclic ketone has been previously elucidated in sage cell-suspension cultures. In the initial step of catabolism, camphor is oxidized to 6-exo-hydroxycamphor, and the corresponding NADPH- and O2-dependent hydrolase activity was demonstrated in microsomal prepn. of sage cells. Several well-established inhibitors of cytochrome P 450-dependent reactions, including cytochrome c, clotrimazole, and CO, inhibited the hydroxylation of camphor, and CO-dependent inhibition was partially reversed by blue light. Upon treatment of sage suspension cultures with 30 mM MnCl2, camphor-6-hydroxylase activity was induced up to 7-fold. A polypeptide with estd. mol. mass of 58 kD from sage microsomal membranes exhibited antigenic cross-reactivity in western blot expts. with two heterologous polyclonal antibodies raised against cytochrome P 450 camphor-5-exo-hydroxylase from **Pseudomonas** putida and cytochrome P 450 limonene-6S-hydroxylase from spearmint (Mentha spicata). Dot blotting indicated that the concn. of this polypeptide increased with camphor hydroxylase activity in microsomes of Mn2+-induced sage cells. These results suggest that camphor-6-exo-hydroxylase from sage is a microsomal cytochrome P 450 monooxygenase that may share common properties and epitopes with bacterial and other plant **monoterpene** hydroxylases.

L38 ANSWER 41 OF 71 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1993:526584 BIOSIS
DOCUMENT NUMBER: PREV199396139991
TITLE: Guaianin N, a new saponin from flowers of Guaiacum officinale.
AUTHOR(S): Ahmad, Viqar Uddin; Saba, Nikhat
CORPORATE SOURCE: H.E.J. Research Inst. Chem., Univ. Karachi, Karachi-75270, Pakistan
SOURCE: Pakistan Journal of Scientific and Industrial Research, (1993) Vol. 36, No. 2-3, pp. 54-56.
CODEN: PSIRAA. ISSN: 0030-9885.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 19 Nov 1993
Last Updated on STN: 3 Jan 1995
AB A new triterpenoidal saponin, guaianin N, (1) has been isolated from the butanolic extract of the flowers of Guaiacum officinale. It showed antibacterial activity against **Pseudomonas** pseudomaliae as well as brine shrimp toxicity (1). Spectroscopic methods have been used to characterize compound 1 as 3-O-(beta-D-glucopyranosyl (fwdarw 3)alpha-L-arabinopyranosyl)-oleanolic acid.

L38 ANSWER 42 OF 71 MEDLINE on STN DUPLICATE 6

ACCESSION NUMBER: 92332528 MEDLINE
DOCUMENT NUMBER: PubMed ID: 1629218
TITLE: Cytochrome P-450terp. Isolation and purification of the protein and cloning and sequencing of its operon.
AUTHOR: Peterson J A; Lu J Y; Geisselsoder J; Graham-Lorence S; Carmona C; Witney F; Lorence M C
CORPORATE SOURCE: Department of Biochemistry, University of Texas Southwestern Medical Center, Dallas 75235-9038.
CONTRACT NUMBER: GM43479 (NIGMS)
SOURCE: Journal of biological chemistry, (1992 Jul 15) 267 (20) 14193-203.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-M63383; GENBANK-M86615; GENBANK-M86616; GENBANK-M86617; GENBANK-M86618; GENBANK-M86619; GENBANK-M86620; GENBANK-M90360; GENBANK-M91440; GENBANK-X62322
ENTRY MONTH: 199208
ENTRY DATE: Entered STN: 19920904
Last Updated on STN: 19920904
Entered Medline: 19920814

AB Cytochromes P-450 are extremely important in the oxidative metabolism of a variety of endogenous and exogenous compounds in pro- and eukaryotic organisms. Progress in understanding the structure and mechanism of action of this superfamily of enzymes has been hampered by the properties of the eukaryotic enzymes and the availability of only one well-characterized prokaryotic enzyme as a model. We report here the isolation of a **Pseudomonas** species which will utilize a **monoterpene** natural product, alpha-terpineol, as its sole source of carbon and energy. Approximately 1% of the soluble protein in the cell-free extract is a novel cytochrome P-450 (P-450terp). This enzyme and its associated iron sulfur protein electron carrier (terpredoxin) have been purified to homogeneity and their NH2-terminal amino acid sequences determined. The amino acid sequences of six tryptic peptide fragments of cytochrome P-450terp have also been determined. This sequence information was used to clone the gene encoding cytochrome P-450terp. Three clones representing approximately 8 kilobase pairs of unique sequences were selected and sequenced. Five non-overlapping open reading frames (ORFs) were found in the sequences, and the translated sequences were used to search the Protein Identification Resource for comparable proteins. The ORFs were identified as: 1) an alcohol dehydrogenase, 2) an aldehyde dehydrogenase, 3) cytochrome P-450terp, 4) terpredoxin reductase, and 5) terpredoxin. The identification of both the cytochrome P-450terp and terpredoxin DNA sequence was confirmed by the presence of each of the corresponding amino acid sequences found in the purified proteins. The five ORFs were bounded on both the 5' and 3' ends by consensus factor-independent terminator sequences. A consensus promoter sequence was found immediately 5' to the first ORF. These results indicate that we have sequenced the complete terp operon. Comparison of the amino acid sequence of cytochrome P-450terp to that of all other cytochromes P-450 has shown that it is the first member of the gene family CYP108. Preliminary characterization of the chemical and physical properties and the preparation of crystals of this new cytochrome P-450, suitable for x-ray diffraction analysis, indicate that it will be useful in comparison studies with other members of this class of proteins.

L38 ANSWER 43 OF 71 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1992:152898 BIOSIS
DOCUMENT NUMBER: PREV199242069098; BR42:69098
TITLE: MICROBIAL METABOLISM OF **MONOTERPENES** RECENT DEVELOPMENTS.
AUTHOR(S): TRUDGILL P W [Reprint author]
CORPORATE SOURCE: DEP BIOCHEMISTRY, UNIVERSITY COLLEGE WALES, ABERYSTWYTH, DYFED SY23 3DD, UK
SOURCE: (1991) pp. 93-106. RATLEDGE, C. (ED.). PHYSIOLOGY OF BIODEGRADATIVE MICROORGANISMS. VIII+141P. KLUWER ACADEMIC PUBLISHERS: DORDRECHT, NETHERLANDS; NORWELL, MASSACHUSETTS, USA. ILLUS.

ISBN: 0-7923-1132-9.
DOCUMENT TYPE: Book
FILE SEGMENT: BR
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 18 Mar 1992
Last Updated on STN: 18 Mar 1992

L38 ANSWER 44 OF 71 MEDLINE on STN DUPLICATE 7
ACCESSION NUMBER: 90110186 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2295633
TITLE: Protein components of a cytochrome P-450 linalool 8-methyl hydroxylase.
AUTHOR: Ullah A J; Murray R I; Bhattacharyya P K; Wagner G C; Gunsalus I C
CORPORATE SOURCE: Department of Biochemistry, University of Illinois, Urbana 61801.
CONTRACT NUMBER: R01 DK00562 (NIDDK)
SOURCE: Journal of biological chemistry, (1990 Jan 25) 265 (3) 1345-51.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199002
ENTRY DATE: Entered STN: 19900328
Last Updated on STN: 19960129
Entered Medline: 19900221
AB The cytochrome P-450 heme-thiolate monooxygenases that hydroxylate **monoterpene** hydrocarbon groups are effective models for the cytochrome P-450 family. We have purified and characterized the three proteins from a P-450-dependent linalool 8-methyl hydroxylase in **Pseudomonas** putida (incognita) strain PpG777. The proteins resemble the camphor 5-exohydroxylase components in chemical and physical properties; however, they show neither immunological cross-reactivity nor catalytic activity in heterogenous recombination. These two systems provide an excellent model to probe more deeply the heme-thiolate reaction center, molecular domains of substrate specificity, redox-pair interactions, and the regulation of the reaction cycle.

L38 ANSWER 45 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1991:3406 CAPLUS
DOCUMENT NUMBER: 114:3406
TITLE: Antimicrobial activity of a new **monoterpene** from Plocamium cartilagineum from Antarctic Peninsula
AUTHOR(S): Rovirosa, Juana; Sanchez, Isabel; Palacios, Yolanda; Darias, Jose; San-Martin, Aurelio
CORPORATE SOURCE: Fac. Cienc., Univ. Chile, Santiago, Chile
SOURCE: Boletin de la Sociedad Chilena de Quimica (1990), 35(2), 131-5
CODEN: BOCQAX; ISSN: 0366-1644
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The red seaweed P. cartilagineum contained 3 halogenated **monoterpenes**, one of which [ClCH2CCl(CH2Br)CH:CHCHClCMe(OH)CH:CHCl] was a new natural product. Structures were assigned on the basis of IR, 13C NMR, and mass spectral data. All the compds. showed antibiotic activity against **Pseudomonas** aeruginosa, Proteus vulgaris, Bacillus subtilis, and Staphylococcus aureus at 2.5 .mu.g/mL.

L38 ANSWER 46 OF 71 MEDLINE on STN DUPLICATE 8
ACCESSION NUMBER: 92257129 MEDLINE
DOCUMENT NUMBER: PubMed ID: 1368150
TITLE: Microbial metabolism of **monoterpenes**--recent developments.
AUTHOR: Trudgill P W
CORPORATE SOURCE: Department of Biochemistry, University College of Wales, Aberystwyth, Dyfed, UK.
SOURCE: Biodegradation, (1990) 1 (2-3) 93-105.
Journal code: 9100834. ISSN: 0923-9820.
PUB. COUNTRY: Netherlands

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Biotechnology
ENTRY MONTH: 199206
ENTRY DATE: Entered STN: 19950809
Last Updated on STN: 19950809
Entered Medline: 19920618

AB **Monoterpenes** are important renewable resources for the perfume and flavour industry but the pathways and enzymology of their degradation by microorganisms are not well documented. Until recently the acyclic **monoterpene** alcohols, (+)-camphor and the isomers of limonene were the only compounds for which significant sections of catabolic pathways and associated enzymology had been reported. In this paper recent developments in our understanding of the enzymology of ring cleavage by microorganisms capable of growth with 1,8-cineole and alpha-pinene are described. 1,8-Cineole has the carbocyclic skeleton of a monocyclic **monoterpene** with the added complication of an internal ether linkage. Ring hydroxylation strategy and biological Baeyer-Villiger oxygenation lead to an efficient method for cleaving the ether linkage. alpha-Pinene is an unsaturated bicyclic **monoterpene** hydrocarbon. At least two catabolic pathways exist. Information concerning one of them, in which alpha-pinene may be initially converted into limonene, is rudimentary. The other involves attack at the double bond resulting in formation of alpha-pinene epoxide. Ring cleavage is then catalysed by a novel lyase that requires no additional components and breaks both carbocyclic rings in a concerted manner.

L38 ANSWER 47 OF 71 MEDLINE on STN
ACCESSION NUMBER: 89359160 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2504698
TITLE: Plasmid control of the **Pseudomonas** aeruginosa and **Pseudomonas** putida phenotypes and of linalool and p-cymene oxidation.
AUTHOR: de Smet M J; Friedman M B; Gunsalus I C
CORPORATE SOURCE: La Jolla Biological Laboratories, Salk Institute, San Diego, California 92138.
CONTRACT NUMBER: 5 ROI AM00562 (NIADDK)
SOURCE: Journal of bacteriology, (1989 Sep) 171 (9) 5155-61.
Journal code: 2985120R. ISSN: 0021-9193.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198909
ENTRY DATE: Entered STN: 19900309
Last Updated on STN: 19900309
Entered Medline: 19890927

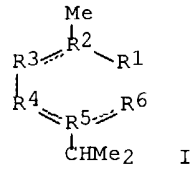
AB Two **Pseudomonas** strains (PpG777 and PaG158) were derived from the parent isolate **Pseudomonas** incognita (putida). Strain PpG777 resembles the parental culture in growth on linalool as a source of carbon and slight growth on p-cymene, whereas PaG158 grows well on p-cymene, but not on linalool or other terpenes tested, and has a P. aeruginosa phenotype. Curing studies indicate that linalool metabolism is controlled by an extrachromosomal element whose loss forms a stable strain PaG158 with the p-cymene growth and P. aeruginosa phenotype characters. The plasmid can be transferred by PpG777 to both P. putida and P. aeruginosa strains. Surprisingly, the latter assume the P. putida phenotype. We conclude that the genetic potential to oxidize p-cymene is inherent in PpG777 but expression is repressed. Similarly, this observation implies that support of linalool oxidation effectively conceals the P. aeruginosa character.

L38 ANSWER 48 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1989:210972 CAPLUS
DOCUMENT NUMBER: 110:210972
TITLE: Manufacture of **monoterpene** aldehydes and alcohols with **Pseudomonas** and their use as perfumes or flavoring agents
INVENTOR(S): Harries, Peter Conroy; Jeffcoat, Roger; Griffiths, Evan Thomas; Trudgill, Peter William
PATENT ASSIGNEE(S): Unilever PLC, UK

SOURCE: Eur. Pat. Appl., 7 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 271609	A1	19880622	EP 1986-202335	19861219
R: GB				

PRIORITY APPLN. INFO.: EP 1986-202335 19861219
OTHER SOURCE(S): MARPAT 110:210972
GI



I

AB The title compds. [I; R1 = CH2OH, CHO; R2, R5 = CH, C; R3, R4 = CH2, CH; R6 = Me, CH2; with the proviso that R1 .noteq. CHO when R3 = CH and R2 = R5 = C, and R6 = CH2], useful as perfumes and flavoring agents (no data), are manufd. with **Pseudomonas** species. **Pseudomonas** strain NCIB 11671 was grown on pinene and a cell-free ext. was prepd. by std. procedures. Metab. of pinene epoxide by this cell-free ext. in the absence of added cofactors gave Me2CHC(:CH2)CH2CH:CMeCHO. The cell-free ext. in the above example was incubated in the presence of NADH to give Me2CHC(:CH2)CH2CH:CMeCH2OH.

L38 ANSWER 49 OF 71 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1989:98274 BIOSIS
DOCUMENT NUMBER: PREV198987052410; BA87:52410
TITLE: THE ROLES OF ACTIVE SITE HYDROGEN BONDING IN CYTOCHROME P-450-C-A-M AS REVEALED BY SITE-DIRECTED MUTAGENESIS.
AUTHOR(S): ATKINS W M [Reprint author]; SLIGAR S G
CORPORATE SOURCE: DEP BIOCHEM, UNIV ILL, URBANA, ILL 61801, USA
SOURCE: Journal of Biological Chemistry, (1988) Vol. 263, No. 35, pp. 18842-18849.
CODEN: JBCHA3. ISSN: 0021-9258.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 6 Feb 1989
Last Updated on STN: 6 Feb 1989

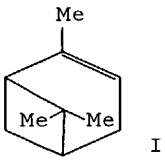
AB The role of the active site hydrogen bond of cytochrome P-450cam has been studied utilizing a combination of site-directed mutagenesis and substrate analogues with altered hydrogen bonding capabilities. Cytochrome P-450cam normally catalyzes the regiospecific hydroxylation of the **monoterpene** camphor. The x-ray crystal structure of this soluble bacterial cytochrome P-450 indicates a specific hydrogen bond bewteen tyrosine 96 and the carbonyl moiety of the camphor substrate. The site-directed mutant in which tyrosine 96 has been changed to a phenylalanine and the substrate analogues thiocamphor and camphane have been used to probe this interaction in several aspects of catalysis. At room temperature, both the mutant enzyme with camphor and the wild type enzyme with thiocamphor bound result in 59 and 65% high-spin ferric enzyme as compared to the 95% high spin population obtained with native enzyme and camphor as substrate. The equilibrium dissociation constant is moderately increased, from 1.6 .mu.M for the wild type protein to 3.0 and 3.3 .mu.M for wild type-thiocamphor and mutant-camphor complexes, respectively. Camphane bound to cytochrome P-450cam exhibits a larger decrease in high spin fraction (45%) and a correspondingly larger KD (46

.mu.M), sugesting that the carbonyl moiety of camphor plays an important steric role in addition to its interaction as a hydrogen bond acceptor. The absolute regioselectivity of the mutant enzyme, and of the wild type enzyme with thiocamphor, is lost resulting in production of several hydroxylated products in addition to the 5-exo-hydroxy isomer. Based on rates of NADH oxidation, comparison of the substrate specificity for these systems (kcat/KD) indicates a 5- and 7-fold decrease in specificity for the mutant enzyme and thiocamphor-wild type complex, respectively. The replacement of the cytochrome P-450cam active site tyrosine with phenylalanine does not affect the branching ratio of monooxygenase versus oxidase chemistry or peroxygenase activity.

L38 ANSWER 50 OF 71 MEDLINE on STN
ACCESSION NUMBER: 88032812 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3667521
TITLE: Bacterial metabolism of alpha-pinene: pathway from alpha-pinene oxide to acyclic metabolites in Nocardia sp. strain P18.3.
AUTHOR: Griffiths E T; Bociek S M; Harries P C; Jeffcoat R; Sissons D J; Trudgill P W
CORPORATE SOURCE: Department of Biochemistry, University College of Wales, Aberystwyth, Dyfed, Great Britain.
SOURCE: Journal of bacteriology, (1987 Nov) 169 (11) 4972-9. Journal code: 2985120R. ISSN: 0021-9193.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198712
ENTRY DATE: Entered STN: 19900305
Last Updated on STN: 19970203
Entered Medline: 19871209

AB Over 20 gram-positive bacteria were isolated by elective culture with (+/-)-alpha-pinene as the sole carbon source. One of these strains, Nocardia sp. strain P18.3, was selected for detailed study. alpha-Pinene-grown cells oxidized, without lag, alpha-pinene, alpha-pinene oxide (epoxide), and the cis and trans isomers of 2-methyl-5-isopropylhexa-2,5-dienal. No other tested terpene was oxidized at a significant rate. alpha-Pinene was not metabolized by cell extracts in the presence or absence of NADH or NADPH. Cell extracts catalyzed a rapid decyclization of alpha-pinene oxide, in the absence of added cofactors, with the formation of cis-2-methyl-5-isopropylhexa-2,5-dienal. Further oxidation of the aldehyde to the corresponding acid occurred in the presence of NAD. Both activities were induced by growth with alpha-pinene. A rapid, nonenzymic transformation of the cis aldehyde into the trans isomer occurred in glycine buffer. The trans isomer was also a substrate for the NAD-linked aldehyde dehydrogenase. The distribution of the alpha-pinene oxide lyase in alpha-pinene-utilizing **Pseudomonas** spp. was also investigated and was compatible with the two alternative ring-cleavage sequences that have been proposed on the basis of accumulated metabolites.

L38 ANSWER 51 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 9
ACCESSION NUMBER: 1988:34587 CAPLUS
DOCUMENT NUMBER: 108:34587
TITLE: Initial enzymic steps in the degradation of alpha-pinene by **Pseudomonas** fluorescens NCIMB 11671
AUTHOR(S): Best, D. J.; Floyd, N. C.; Magalhaes, A.; Burfield, A.; Rhodes, P. M.
CORPORATE SOURCE: Biotechnol. Cent., Cranfield Inst. Technol., Cranfield/Bedfordshire, MK43 0AL, UK
SOURCE: Biocatalysis (1987), 1(2), 147-59
CODEN: BIOCED; ISSN: 0886-4454
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

AB The initial steps in the degrdn. of the bicyclic **monoterpene**, (-)-.alpha.-pinene (I), by a new isolate, P. fluorescens NCIMB 11671, are described. Degrdn. is initiated by an oxygenative attack upon the unsatd. position in the mol. to form the corresponding epoxide, catalyzed by a pyridine nucleotide-dependent oxygenase with a narrow substrate specificity. The epoxide undergoes rapid rearrangement and concomitant decyclization to form 2-methyl-5-isopropylhexa-2,5-dien-1-al, in which both the cyclobutane and cyclohexane rings of the parent mol. are broken, without the insertion of further O species or the appearance of other intermediate compds. This represents a new enzymic mechanism for the disruption of a cyclic ring system.

L38 ANSWER 52 OF 71 MEDLINE on STN
ACCESSION NUMBER: 87126838 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3813557
TITLE: P-450 binding to substrates camphor and linalool versus pressure.
AUTHOR: Marden M C; Hoa G H
SOURCE: Archives of biochemistry and biophysics, (1987 Feb 15) 253 (1) 100-7.
Journal code: 0372430. ISSN: 0003-9861.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198703
ENTRY DATE: Entered STN: 19900303
Last Updated on STN: 19900303
Entered Medline: 19870319

AB The spin equilibrium of two bacterial cytochrome P-450 enzymes are compared by their visible spectra versus temperature and pressure. P-450 from **Pseudomonas** linalool shows a much weaker dependence on pressure than P-450 from P. putida which has camphor as substrate. The linalool system denatures at a higher pressure (3 kbar) than the camphor system (1 kbar) and shows a weaker dependence on external solvent conditions. The camphor system shows evidence of the binding of a second substrate molecule which reverses the effect of the first on the spin equilibrium. A model involving two substrate molecules is an alternative explanation of the apparent saturation with camphor of the spin equilibrium.

L38 ANSWER 53 OF 71 LIFESCI COPYRIGHT 2004 CSA on STN
ACCESSION NUMBER: 86:42648 LIFESCI
TITLE: Terpenoid metabolism by **Pseudomonas** .
THE BIOLOGY OF **PSEUDOMONAS** .
AUTHOR: Trudgill, P.W.; Sokatch, J.R. [editor]
CORPORATE SOURCE: Dep. Biochem. and Agric. Biochem., Univ. Coll. Wales, Aberystwyth, Dyfed SY23 3DD, UK
SOURCE: THE BACTERIA: A TREATISE ON STRUCTURE AND FUNCTION., (1986) pp. 483-525.
ISBN: 0-12-307210-7.
DOCUMENT TYPE: Book
TREATMENT CODE: General Review
FILE SEGMENT: J; A
LANGUAGE: English

AB Terpenoids formed in nature by living organisms encompass a structural diversity that ranges from simple branched-chain hydrocarbons through the monocyclic and bicyclic **monoterpenes** to complex sesquiterpene structures. In addition to the parent hydrocarbons, naturally occurring compounds include related alcohols and ketones and molecules with

unsaturated carbon atoms. The necessary recycling of this organic carbon in nature presents a number of intriguing problems associated with the elimination of side chains, the activation and cleavage of the carbocyclic rings, and the provision of intermediates for central metabolic pathways.

L38 ANSWER 54 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1987:474282 CAPLUS
DOCUMENT NUMBER: 107:74282
TITLE: Composition and antimicrobial activity of the essential oil from some Zanthoxylum L. species introduced into the Apsheron Peninsula
AUTHOR(S): Mishurova, S. S.; Abbasov, R. M.; Malinovskaya, T. A.
CORPORATE SOURCE: USSR
SOURCE: Izvestiya Akademii Nauk Azerbaidzhanskoi SSR, Seriya Biologicheskikh Nauk (1986), (5), 18-25
CODEN: IABLAQ; ISSN: 0132-6112
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB From fruit-set to ripening, oil increased from 3.52 to 7.50 dry-wt.% in the fruit, and from 0.33 to 0.41 in the foliage, of Z. simulans. The oils had 20 and 21 constituents, resp., and comprised 13.4 and 24.2% high-boiling fraction, resp. Cineole and limonene were the main constituents of both oils. Nine constituents, were identified in fruit and foliage oils. Fruit-oil cineole and limonene were max. during fruit-set and ripening, resp. Z. alatum Contained no oil in the foliage, and the oil increased from 1.68 to 3.47% in the fruit from fruit-set to ripening. The oil from ripe fruit contained 16 constituents, the main ones being cineole (47.3%) and limonene (26.1%). Thujene, .alpha.- and .beta.-pinene, camphene, sabinene, .beta.-phellandrene, limonene, cineole, and p-cymol were the main **monoterpenes** in the ripe fruit of both species. The oil of Z. simulans fruit was more effective against Escherichia coli than against Candida albicans, whereas Staphylococcus aureus and **Pseudomonas** aeruginosa were more tolerant than Serratia marcescens. The oil also had sporicidal activity against E. coli.

L38 ANSWER 55 OF 71 MEDLINE on STN
ACCESSION NUMBER: 85124128 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6525582
TITLE: Metabolism of alpha-terpineol by **Pseudomonas** incognita.
AUTHOR: Madyastha K M; Renganathan V
SOURCE: Canadian journal of microbiology, (1984 Dec) 30 (12) 1429-36.
Journal code: 0372707. ISSN: 0008-4166.
PUB. COUNTRY: Canada
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198504
ENTRY DATE: Entered STN: 19900320
Last Updated on STN: 19900320
Entered Medline: 19850417
AB Details of the metabolism of alpha-terpineol by **Pseudomonas** incognita are presented. Degradation of alpha-terpineol by this organism resulted in the formation of a number of acidic and neutral metabolites. Among the acidic metabolites, beta-isopropyl pimelic acid, 1-hydroxy-4-isopropenyl-cyclohexane-1-carboxylic acid, 8-hydroxycumic acid, oleuropeic acid, cumic acid, and p-isopropenyl benzoic acid have been identified. Neutral metabolites identified were limonene, p-cymene-8-ol, 2-hydroxycineole, and uroterpenol. Cell-free extracts prepared from alpha-terpineol adapted cells were shown to convert alpha-terpineol, p-cymene-8-ol, and limonene to oleuropeic acid, 8-hydroxycumic acid, and perillic acid, respectively, in the presence of NADH. The same cell-free extract contained NAD+ -specific dehydrogenase(s) which converted oleuropyl alcohol, p-cymene-7,8-diol, and perillyl alcohol to their corresponding 7-carboxy acids. On the basis of various metabolites isolated from the culture medium, together with the supporting evidence obtained from enzymatic and growth studies, it appears that P. incognita degrades alpha-terpineol by at least three different routes. While one of the pathways seems to operate via oleuropeic acid, a

second may be initiated through the aromatization of alpha-terpineol. The third pathway may involve the formation of limonene from alpha-terpineol and its further metabolism.

L38 ANSWER 56 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 10
ACCESSION NUMBER: 1984:487161 CAPLUS
DOCUMENT NUMBER: 101:87161
TITLE: Metabolism of structurally modified acyclic **monoterpenes** by **Pseudomonas** incognita
AUTHOR(S): Renganathan, V.; Madyastha, K. Madhava
CORPORATE SOURCE: Dep. Org. Chem., Indian Inst. Sci., Bangalore, 560 012, India
SOURCE: Canadian Journal of Microbiology (1984), 30(5), 637-41
CODEN: CJMIAZ; ISSN: 0008-4166
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The ability of P. incognita to metabolize some structurally modified acyclic **monoterpenes** was tested. The 6,7 double bond was found essential for these compds. to serve as a substrate for this organism, whereas the same was not true with the 1,2 double bond. Metab. of dihydrolinalyl acetate by this strain yielded dihydrolinalool, dihydrolinalool 8-carboxylic acid, dihydrolinalyl acetate 8-carboxylic acid, and 4-acetoxy-4-Me hexanoic acid. A cell-free ext. prepd. from dihydrolinalyl acetate-grown cells transformed dihydrolinalyl acetate into dihydrolinalool and dihydrolinalool-8-carboxylic acid. On the basis of the identification of various metabolites isolated from the culture medium, and on growth and manometric studies carried out with the isolated metabolites as well as with related synthesis analogs, probable pathways for the biodegrdn. of dihydrolinalyl acetate are presented.

L38 ANSWER 57 OF 71 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 84:341804 SCISEARCH
THE GENUINE ARTICLE: SX169
TITLE: METABOLISM OF STRUCTURALLY MODIFIED ACYCLIC **MONOTERPENES** BY **PSEUDOMONAS**-INCOGNITA
AUTHOR: RENGANATHAN V; MADYASTHA K M (Reprint)
CORPORATE SOURCE: INDIAN INST SCI, DEPT ORGAN CHEM, BIOORGAN LAB, BANGALORE 560012, KARNATAKA, INDIA
COUNTRY OF AUTHOR: INDIA
SOURCE: CANADIAN JOURNAL OF MICROBIOLOGY, (1984) Vol. 30, No. 5, pp. 637-641.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: 14

L38 ANSWER 58 OF 71 MEDLINE on STN DUPLICATE 11
ACCESSION NUMBER: 84160312 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6671672
TITLE: Bio-degradation of acetates of geraniol, nerol & citronellol by P. incognita: isolation & identification of metabolites.
AUTHOR: Madyastha K M; Renganathan V
SOURCE: Indian journal of biochemistry & biophysics, (1983 Jun) 20 (3) 136-40.
Journal code: 0310774. ISSN: 0301-1208.
PUB. COUNTRY: India
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198405
ENTRY DATE: Entered STN: 19900319
Last Updated on STN: 19900319
Entered Medline: 19840516

L38 ANSWER 59 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 12
ACCESSION NUMBER: 1983:140251 CAPLUS
DOCUMENT NUMBER: 98:140251
TITLE: Linalyl acetate is metabolized by **Pseudomonas** incognita with the acetoxy group intact

AUTHOR(S): Renganathan, V.; Madyastha, K. Madhava
CORPORATE SOURCE: Dep. Org. Chem., Indian Inst. Sci., Bangalore, 560 012, India
SOURCE: Applied and Environmental Microbiology (1983), 45(1), 6-15
CODEN: AEMIDF; ISSN: 0099-2240
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Metab. of linalyl acetate by P. incognita isolated by enrichment culture on the acyclic **monoterpene** alc. linalool was studied. Biodegrdn. of linalyl acetate by this strain resulted in the formation of linalool, linalool-8-carboxylic acid, oleuropeic acid, and .DELTA.5-4-acetoxy-4-methylhexenoic acid. Cells adapted to linalyl acetate metabolized linalyl acetate-8-aldehyde to linalool-8-carboxylic acid, linalylacetate-8-carboxylic acid, .DELTA.5-4-acetoxy-4-methylhexenoic acid, and geraniol-8-carboxylic acid. Resting cell suspensions previously grown with linalyl acetate oxidized linalylacetate-8-aldehyde to linalyl acetate-8-carboxylic acid, .DELTA.5-4-acetoxy-4-methylhexenoic acid, and pyruvic acid. The crude cell-free ext., obtained from the sonicate of linalyl acetate-grown cells, contained enzyme systems responsible for the formation of linalylacetate-8-carboxylic acid and linalool-8-carboxylic acid from linalyl acetate. The same supernatant fraction contained NAD-linked alc. and aldehyde dehydrogenases that were involved in the formation of linalylacetate-8-aldehyde and linalylacetate-8-carboxylic acid, resp. On the basis of various metabolites isolated from the culture medium, resting cell expts., growth and manometric studies carried out with the isolated metabolites as well as related synthetic analogs, and the preliminary enzymic studies performed with the cell-free ext., a probable pathway for the microbial degrdn. of linalyl acetate with the acetoxy group intact is suggested.

L38 ANSWER 60 OF 71 MEDLINE on STN
ACCESSION NUMBER: 81142099 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7204334
TITLE: p-Cymene pathway in **Pseudomonas** putida: selective enrichment of defective mutants by using halogenated substrate analogs.
AUTHOR: Wigmore G J; Ribbons D W
CONTRACT NUMBER: GM-20172 (NIGMS)
SOURCE: Journal of bacteriology, (1980 Aug) 143 (2) 816-24.
Journal code: 2985120R. ISSN: 0021-9193.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198105
ENTRY DATE: Entered STN: 19900316
Last Updated on STN: 19970203
Entered Medline: 19810521

AB Several classes of mutants of **Pseudomonas** putida (JT810) defective in the utilization of p-cymene as sole carbon source have been isolated. Selective enrichment of the mutants and for strains putatively cured of a degradative plasmid was achieved by incubation of cells in minimal growth media containing p-cymene (or p-cumate) and various halogenated analogs of the growth substrates or pathway intermediates. Analogs which led to successful enrichments included: p-chlorotoluene, p-bromotoluene, alpha-chloro-p-xylene, and p-iodobenzoate. A mutant strain, PpJT811, constitutive for the p-cymene pathway gave significantly greater enrichments of defective mutants than the wild-type parent PpJT810 after incubation with the halogenated analogs. It is suggested that the defective mutants are enriched because of the genetic alterations they possess, which confer immunity to a lethal synthesis performed by transformation of the analogs in clones possessing an intact p-cymene pathway. A nomenclature for the genetic organization of p-cymene pathway is described.

L38 ANSWER 61 OF 71 MEDLINE on STN
ACCESSION NUMBER: 80152206 MEDLINE
DOCUMENT NUMBER: PubMed ID: 539823
TITLE: Enzyme recruitment allows the biodegradation of

recalcitrant branched hydrocarbons by **Pseudomonas** citronellolis.
AUTHOR: Fall R R; Brown J L; Schaeffer T L
SOURCE: Applied and environmental microbiology, (1979 Oct) 38 (4) 715-22.
Journal code: 7605801. ISSN: 0099-2240.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198005
ENTRY DATE: Entered STN: 19900315
Last Updated on STN: 19900315
Entered Medline: 19800514

AB Experiments were carried out to construct pseudomonad strains capable of the biodegradation of certain recalcitrant branched hydrocarbons via a combination of alkane and citronellol degradative pathways. To promote the metabolism of the recalcitrant hydrocarbon 2,6-dimethyl-2-octene we transferred the OCT plasmid to **Pseudomonas** citronellolis, a pseudomonad containing the citronellol pathway. This extended the n-alkane substrate range of the organism, but did not permit utilization of the branched hydrocarbon even in the presence of a gratuitous inducer of the OCT plasmid. In a separate approach n-decane-utilizing (Dec+) mutants of P. citronellolis were selected and found to be constitutive for the expression of medium- to long-chain alkane oxidation. The Dec+ mutants were capable of degradation of 2,6-dimethyl-2-octene via the citronellol pathway as shown by (i) conversion of the hydrocarbon to citronellol, determined by gas-liquid chromatography-mass spectrometry, (ii) induction of geranyl-coenzyme A carboxylase, a key enzyme of the citronellol pathway, and (iii) demonstration of beta-decarboxymethylation of the hydrocarbon by whole cells. The Dec+ mutants had also acquired the capacity to metabolize other recalcitrant branched hydrocarbons such as 3,6-dimethyloctane and 2,6-dimethyldecane. These studies demonstrate how enzyme recruitment can provide a pathway for the biodegradation of otherwise recalcitrant branched hydrocarbons.

L38 ANSWER 62 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1978:18810 CAPLUS
DOCUMENT NUMBER: 88:18810
TITLE: Microbiological transformations of terpenes. Part XXIII. Fermentation of geraniol, nerol and limonene by a soil pseudomonad, **Pseudomonas** incognita (Linalool strain)
AUTHOR(S): Devi, J. Rama; Bhattacharyya, P. K.
CORPORATE SOURCE: Dep. Org. Chem., Indian Inst. Sci., Bangalore, India
SOURCE: Indian Journal of Biochemistry & Biophysics (1977), 14(3), 288-91
CODEN: IJBBBQ; ISSN: 0301-1208
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A strain of P. incognita isolated by enrichment culture technique on the **monoterpene** alc. linalool was found to grow also on the isomeric alcs. geraniol and nerol as well as the **monoterpene** hydrocarbon limonene. Fermn. of geraniol by this strain (linalool strain) resulted in the formation of a no. of neutral and acidic metabolites. Citral, 3-(4-methyl-3-pentenyl)-3-butenolide, 3,7-dimethyl-2-oxo-oct-6-ene-1,3-diol, and 3,7-dimethyl-oct-6-ene-1,2,3-triol were isolated among the neutral products. The acidic products isolated and identified were geranic acid and 7-methyl-3-oxo-6-octenoic acid. Fermn. of nerol yielded neral, a neutral metabolite, and neranic acid, an acidic metabolite. The fermn. of limonene by the linalool strain yielded perillic and .beta.-isopropenyl pimelic acids.

L38 ANSWER 63 OF 71 MEDLINE on STN DUPLICATE 13
ACCESSION NUMBER: 77159589 MEDLINE
DOCUMENT NUMBER: PubMed ID: 851909
TITLE: Metabolism of **monoterpene** alcohol, linalool, by a soil pseudomonad.
AUTHOR: Madyastha K; Bhattacharyya P K; Vaidyanathan C S
SOURCE: Canadian journal of microbiology, (1977 Mar) 23 (3) 230-9.
Journal code: 0372707. ISSN: 0008-4166.

PUB. COUNTRY: Canada
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197706
ENTRY DATE: Entered STN: 19900313
Last Updated on STN: 19900313
Entered Medline: 19770622

AB A microorganism of the genus **Pseudomonas** has been isolated from the soil by enrichment culture techniques with linalool(I) as the sole source of carbon and energy. The organism is also capable of utilizing limonene, citronellol, and geraniol as substrates but fails to grow on citral, critranellal, and 1,8-cineole. Fermentation of linalool by this bacterium in a mineral salt medium results in the formation of 10-hydroxylinalool(II), oleuropeic acid (IX), 2-vinyl-2-methyl-5-hydroxyisopropyl-tetraphydrofuran)linalool oxide, V), 2-vinyl-2-methyl-tetrahydrofuran-5-one(unsaturated lactone, VI), and few unidentified minor metabolities. Probable pathways for the biodegradation of linalool are presented.

L38 ANSWER 64 OF 71 MEDLINE on STN DUPLICATE 14
ACCESSION NUMBER: 76253573 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8091
TITLE: Multiple acyl-coenzyme A carboxylases in **Pseudomonas** citronellolis.
AUTHOR: Hector M L; Fall R R
SOURCE: Biochemistry, (1976 Aug 10) 15 (16) 3465-72.
Journal code: 0370623. ISSN: 0006-2960.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197611
ENTRY DATE: Entered STN: 19900313
Last Updated on STN: 19970203
Entered Medline: 19761101

AB **Pseudomonas** citronellolis was shown to contain four different acyl-coenzyme A carboxylases, including acetyl-, propionyl-, 3-methylcrotonyl-, and geranyl-CoA carboxylases, when grown on the appropriate carbon sources. Acetyl-CoA carboxylase activity in crude extracts was stimulated approximately 40-fold by inclusion of 0.4-0.5 M ammonium sulfate in the assay. Unexpectedly high levels of propionyl-CoA carboxylase activity, also stimulated by ammonium sulfate, were found in acetate-grown cells. That these acetyl- and propionyl-CoA carboxylase activities were due to different enzymes was shown by their resolution during purification by a procedure that stabilized acetyl-CoA carboxylase as a complex and separated propionyl-CoA carboxylase into two required protein fractions. Propionate- or valine-grown cells contained a propionyl-CoA carboxylase activity that was strongly inhibited by ammonium sulfate in the assay, and which may represent an inducible form of the enzyme. Geranyl- and 3-methylcrotonyl-CoA carboxylases that catalyze the carboxylation of the 3-methyl groups of homologous acyl-CoA acceptors, were induced by growth on the **monoterpenes**, citronellic or geranoic acid; only 3-methylcrotonyl-CoA carboxylase was induced by growth on leucine or isovaleric acid. Induction of either carboxylase was associated with the appearance of similar high-molecular-weight, biotin-containing proteins as measured by gel filtration. These two carboxylases are probably distinct enzymes since 3-methyl-crotonyl-CoA carboxylase from isovalerate-grown cells does not carboxylate geranyl-CoA, while geranyl-CoA carboxylase will carboxylate both acyl-CoA homologues. P. citronellolis appears to be a useful system for studying the structural aspects of pairs of homologous acyl-CoA carboxylases.

L38 ANSWER 65 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 15
ACCESSION NUMBER: 1976:505844 CAPLUS
DOCUMENT NUMBER: 85:105844
TITLE: Evidence for distinct 3-methylcrotonyl-CoA and geranyl-CoA carboxylases in **Pseudomonas** citronellolis
AUTHOR(S): Hector, Mina L.; Fall, R. Ray
CORPORATE SOURCE: Dep. Chem., Univ. Colorado, Boulder, CO, USA

SOURCE: Biochemical and Biophysical Research Communications (1976), 71(3), 746-53
CODEN: BBRCA9; ISSN: 0006-291X
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A highly purified prepn. contg. geranyl-CoA carboxylase (I) and 3-methylcrotonyl-CoA carboxylase (II) activities was isolated from P citronellolis grown on the **monoterpene**, geranoic acid. These 2 activities and a sep. II from isovalerate-grown cells exhibited identical purifn. behavior, suggesting similar ionic properties and mol. wt. for these enzymes. The I prepn. carboxylated both geranyl-CoA and 3-methylcrotonyl-CoA at relative rates of 1.0 and 0.25, resp.; while II from isovalerate-grown cells was inactive towards geranyl-CoA. II from isovalerate-grown cells was more sensitive to heat denaturation than the I and II activities assocd. with the II prepn. These results suggest that P. citronellolis contains 2 similar but distinct enzymes, I and II, the former having a broader acyl-CoA specificity.

L38 ANSWER 66 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1973:415674 CAPLUS
DOCUMENT NUMBER: 79:15674
TITLE: Microbiological conversion of terpenes. XI. Microbiological conversion of (-)-perillaldehyde and p-mentha-1,3-dien-7-al
AUTHOR(S): Kayahara, Hiroshi; Hayashi, Tetsugo; Tatsumi, Chuji
CORPORATE SOURCE: Coll. Agric., Univ. Shinshu, Ina, Japan
SOURCE: Hakko Kogaku Zasshi (1973), 51(4), 254-9
CODEN: HKZAA2; ISSN: 0367-5963
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A soil pseudomonad, isolated by enrichment culture, can grow with (-)-perillaldehyde (I) or p-mentha-1,3-dien-p-al (II) as the sole C source. Fermn. of I and II by this bacterium in a mineral salt medium produces acidic products such as perillic acid and a new **monoterpene**, 4-isopropyl-1,3-cyclohexadienoic acid, resp.

L38 ANSWER 67 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1972:416437 CAPLUS
DOCUMENT NUMBER: 77:16437
TITLE: Microbiological conversion of terpenes. X. Conversion of .alpha.-terpineol to 8,9-epoxy-p-menthan-1-ol
AUTHOR(S): Hayashi, Tetsugo; Uedono, Shigezo; Tatsumi, Chuji
CORPORATE SOURCE: Coll. Agric., Univ. Shinshu, Matsumoto, Japan
SOURCE: Agricultural and Biological Chemistry (1972), 36(4), 690-1
CODEN: ABCHA6; ISSN: 0002-1369
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A new **monoterpene** epoxide, 8,9-epoxy-p-menthan-1-ol, was obtained from .alpha.-terpineol by treatment with newly isolated **Pseudomonas** pseudomallei. After centrifuging the broth at 5000 g for 10 min, the compd. was extd. from the supernatant with ether and purified by chromatog. with silica gel column. The product was identified by its NMR spectrum.

L38 ANSWER 68 OF 71 MEDLINE on STN DUPLICATE 16
ACCESSION NUMBER: 72153356 MEDLINE
DOCUMENT NUMBER: PubMed ID: 4552632
TITLE: The biosynthesis of **monoterpenes**.
AUTHOR: Banthorpe D V; Charlwood B V; Francis M J
SOURCE: Sogo kango. Comprehensive nursing, quarterly, (1972 Apr) 72 (2) 115-55. Ref: 517
Journal code: 0313161. ISSN: 0038-0660.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
LANGUAGE: English
FILE SEGMENT: Nursing Journals
ENTRY MONTH: 197206
ENTRY DATE: Entered STN: 19900310

Last Updated on STN: 19900310
Entered Medline: 19720613

L38 ANSWER 69 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1974:501591 CAPLUS
DOCUMENT NUMBER: 81:101591
TITLE: **Monoterpene** dissimilation. Chemical and genetic models
AUTHOR(S): Gunsalus, I. C.; Marshall, Vincent P.
CORPORATE SOURCE: Sch. Chem. Sci., Univ. Illinois, Urbana, IL, USA
SOURCE: Critical Reviews in Microbiology (1971), 1(2), 291-310
CODEN: CRVMAC; ISSN: 1040-841X
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review with 66 refs. discussing chem. and enzymic analyses of a readily investigated pseudomonad and M. rhodochrous **monoterpene** catabolic systems, and information useful in the derivation of consts. germane to the understanding of microbial hydrocarbon dissimilation and mammalian drug detoxification. The development of such model systems to understand genetic organization are also discussed.

L38 ANSWER 70 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1968:433769 CAPLUS
DOCUMENT NUMBER: 69:33769
TITLE: Transduction and the clustering of genes in fluorescent pseudomonads
AUTHOR(S): Chakrabarty, A. M.; Gunsalus, C. F.; Gunsalus, Irwin C.
CORPORATE SOURCE: Univ. of Illinois, Urbana, IL, USA
SOURCE: Proceedings of the National Academy of Sciences of the United States of America (1968), 60(1), 168-75
CODEN: PNASA6; ISSN: 0027-8424
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A generalized transducing phage has been obtained for the soil and water pseudomonads now classed as **Pseudomonas** putida, biotype A. For the tryptophan biosynthetic enzymes, preliminary genetic anal. has revealed three gene clusters corresponding to the regulatory groups previously observed in this organism. Such organization is in contrast to the suggestion of scattered loci for P. aeruginosa and a single operon observed in the enteric bacteria. Similarities in chromosomal organization of P. putida and P. aeruginosa were observed for a limited no. of loci. The bicyclic **monoterpene** oxidn. system, a complex, specific, inducible pathway, was susceptible to genetic anal. by transduction. Streptomycin and p-fluorophenylalanine resistance loci were mapped adjacent to the trpABD cluster of the tryptophan biosynthetic pathway and the p-fluorophenylalanine marker was linked to two genes of the camphor pathway. Interstrain gene transfer of a coordinately induced set of 4 enzymes functioning in the degradation of mandelate was achieved. These genes appear to be linked closely to from a cluster. Thus, the work on the chemistry and regulation of the complex inducible pathways of peripheral metabolism in the fluorescent pseudomonads may now be subject to genetic anal.

L38 ANSWER 71 OF 71 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1966:413301 CAPLUS
DOCUMENT NUMBER: 65:13301
ORIGINAL REFERENCE NO.: 65:2494d-g
TITLE: Regulation of catabolic metabolism
AUTHOR(S): Gunsalus, I. C.; Conrad, H. E.; Trudgill, P. W.; Jacobson, L. A.
CORPORATE SOURCE: Univ. of Illinois, Urbana
SOURCE: Israel J. Med. Sci. (1965), 1(6), 1099-1119
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To det. how C compds. entering cells are converted to the essential monomers of biogenesis and cellular energy cycles, bornanering-type **monoterpenes** were employed. These on oxygenation furnish structurally diverse compds., sufficiently water-sol. for activity as inducers and substrates. They have relevance to higher terpenes of biol. importance. **Pseudomonas** putida and a soil diphtheroid (both

capable of growth with camphor as sole C source) cleave both carbocyclic rings of the substrate by the sequence: hydroxylation (at different points with the different microorganisms), secondary dehydrogenation, and ketonelactone conversion. The enzymes are inducible and differ in their selectivity of inducers and substrates. The hydroxylase and ketone-lactone-converting enzymes ("ketolactonases") are mixed-function oxidases, "complexes" recoverable as 2 proteins, served by cofactors, with specificity requirements for at least 3 substrates, an electron donor, O, and the product's C skeleton. The ketolactonase of strain Cl of P. putida possesses a flavoprotein DPNH dehydrogenase (mol. wt. 35,000 according to anal. centrifuge and equil. dialysis) which binds 1 mole of FMN with a Km of 4 .times. 10-7M. It reacts with ketolactonase or artificial electron-transport dyes to reduce O. The ketolactonase, mol. wt. 80,000, contains nonheme Fe and is reduced by DPNH dehydrogenase via FMN. Induction specificity of the alc. dehydrogenases and a flavoprotein DPNH dehydrogenase extends to the D-ring of 17-keto steroids. The dehydrogenase action pattern varies for different alc. substituents on the 4 methylene carbons of bornane. In the diphtheroid, a secondary alc. dehydrogenase acts on 6 of the possible alcs. In the pseudomonad, one dehydrogenase is specific for each of the epimeric alcs. of C-5 of camphor. The structural permissiveness of these enzymes for inducers and substrates is greater than that in essential metabolism. The specificity or selectivity for induction and action occurs at the functional group and adjacent atom level. 25 references

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=> s candida and monoterpene
TOTAL FOR ALL FILES
L45        151 CANDIDA AND MONOTERPENE

=> s l45 and cyclic terpene
TOTAL FOR ALL FILES
L52          0 L45 AND CYCLIC TERPENE

=> s l45 and limonene
TOTAL FOR ALL FILES
L59         47 L45 AND LIMONENE

=> s l59 not 2001-2004/py
TOTAL FOR ALL FILES
L66         24 L59 NOT 2001-2004/PY

=> dup rem l66
PROCESSING COMPLETED FOR L66
L67          13 DUP REM L66 (11 DUPLICATES REMOVED)

=> d ibib abs 1-13

L67  ANSWER 1 OF 13  CAPLUS  COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER:         2000:812013  CAPLUS
DOCUMENT NUMBER:          134:68797
TITLE:                    Essential oil of Phlomis lanata growing in Greece:
                          chemical composition and antimicrobial activity
AUTHOR(S):                Couladis, Maria; Tanimanidis, Andromachi; Tzakou,
                          Olga; Chinou, Ioanna B.; Harvala, Catherine
CORPORATE SOURCE:         Department of Pharmacognosy, School of Pharmacy,
                          University of Athens, Athens, 157 71, Greece
SOURCE:                   Planta Medica (2000), 66(7), 670-672
                          CODEN: PLMEAA; ISSN: 0032-0943
PUBLISHER:                Georg Thieme Verlag
DOCUMENT TYPE:            Journal
LANGUAGE:                 English
AB   The essential oil obtained from the aerial parts of Phlomis lanata has
     been analyzed by GC/MS. Forty-eight compds. representing 96.85% of the
     oil were identified; .alpha.-pinene, limonene and
     trans-caryophyllene were found as its main components. The essential oil
     showed a moderate in vitro activity against six Gram (.+-.) bacteria and a
     stronger one against the three tested pathogenic fungi.
REFERENCE COUNT:          13    THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS
                                RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
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L67 ANSWER 2 OF 13 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 1
ACCESSION NUMBER: 2000:511288 CAPLUS
DOCUMENT NUMBER: 133:251444
TITLE: Inhibition of food spoilage yeasts and aflatoxigenic moulds by **monoterpenes** of the spice Aframomum danielli
AUTHOR(S): Adegoke, G. O.; Iwahashi, H.; Komatsu, Y.; Obuchi, K.; Iwahashi, Y.
CORPORATE SOURCE: National Institute of Bioscience and Human Technology, Tsukuba, 305, Japan
SOURCE: Flavour and Fragrance Journal (2000), 15(3), 147-150
CODEN: FFJOED; ISSN: 0882-5734
PUBLISHER: John Wiley & Sons Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Essential oil **monoterpenes** (.alpha.-terpinene, (+)-**limonene**, .alpha.-pinene, 1,8-cineole) of the spice Aframomum danielli were tested for in vitro antifungal activities against some food spoilage yeasts (Torulopsis **candida**, **Candida** tropicalis, Kluyveromyces thermotolerans, K. fragilis, Hansenula anomala and Pichia pastoris) and mycotoxigenic molds (Aspergillus flavus, A. parasiticus). With .alpha.-terpinene, the mean min. inhibitory concns. (MICs) for T. **candida**, K. fragilis, K. thermotolerans and C. tropicalis were found to be 4.9, 39, 78 and 156 .mu.g/mL, resp. With (+)-**limonene**, the mean MICs for T. **candida**, K. fragilis, K. thermotolerans and C. tropicalis were 39, 312, 39 and 312 .mu.g/mL, resp. The minimal fungal concns. (MFCs) of the **monoterpenes** varied from 39 to 1250 .mu.g/mL for the food spoilage yeasts examd. Within 60 min, .alpha.-terpinene (312 .mu.g/mL) reduced the population of C. tropicalis and H. anomala from 105 to 103 cells/mL. The MIC of (+)-**limonene** for A. parasiticus was 78 .mu.g/mL. As revealed by NMR, both .alpha.-terpinene and (+)-**limonene** caused membrane injury of C. tropicalis cells.
REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 3 OF 13 MEDLINE on STN DUPLICATE 2
ACCESSION NUMBER: 2001102544 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10967461
TITLE: Antifungal activity of volatile constituents of Eugenia dysenterica leaf oil.
AUTHOR: Costa T R; Fernandes O F; Santos S C; Oliveira C M; Liao L M; Ferri P H; Paula J R; Ferreira H D; Sales B H; Silva M do R
CORPORATE SOURCE: Departamento de Microbiologia, Instituto de Patologia Tropical e Saude Publica, Universidade Federal de Goias, 74605-050 Goiania, GO, Brazil.
SOURCE: Journal of ethnopharmacology, (2000 Sep) 72 (1-2) 111-7.
Journal code: 7903310. ISSN: 0378-8741.
PUB. COUNTRY: Ireland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200101
ENTRY DATE: Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20010126
AB The essential oil from the hydrodistillation of Eugenia dysenterica leaves consisted mainly of beta-caryophyllene and alpha-humulene as the major sesquiterpene, while **limonene** and alpha-thujene were the major **monoterpene** hydrocarbons. The main oxygenated mono and sesquiterpene constituents were alpha-terpineol and beta-caryophyllene oxide, respectively. The oil was investigated against eight strains of **Candida** albicans, 35 strains of Cryptococcus neoformans var. neoformans, and two C. neoformans var. gattii isolated from HIV-infected individuals with candidosis or cryptococcal meningitis using the agar dilution method. Based on the minimal inhibitory concentration (MIC) values, the most significant results were obtained against Cryptococcus strains. It was observed that 22 strains were inhibited at a concentration of 250 microg/ml, whereas four exhibited potent inhibition with MIC values below 125 microg/ml against 10(6) UFC/ml organisms. We

found MICs > or = 3.12 microg/ml for 91.6, 50 and 30% of all Cryptococcus strains in relation of amphotericin B, fluconazole and itraconazole, respectively.

L67 ANSWER 4 OF 13 MEDLINE on STN
ACCESSION NUMBER: 1999209290 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10193210
TITLE: Composition and antimicrobial activity of the essential oil of Peumus boldus leaves.
AUTHOR: Vila R; Valenzuela L; Bello H; Canigueral S; Montes M; Adzet T
SOURCE: Planta medica, (1999 Mar) 65 (2) 178-9.
Journal code: 0066751. ISSN: 0032-0943.
PUB. COUNTRY: GERMANY: Germany, Federal Republic of
DOCUMENT TYPE: Letter
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199905
ENTRY DATE: Entered STN: 19990517
Last Updated on STN: 19990517
Entered Medline: 19990504

AB The composition and the antimicrobial activity of the essential oil from the leaves of Peumus boldus is investigated. Analyses of the oil obtained by hydrodistillation were carried out by GC and GC-MS using columns of two different stationary phases. Fractionation of the essential oil by column chromatography on silica gel was performed to improve identification of some constituents. More than 90% of the total oil (46 components) was identified, major constituents being **monoterpenes** (90.5%), among which **limonene** (17.0%), p-cymene (13.6%), 1.8-cineole (11.8%), and beta-phellandrene (8.4%) reached the highest percentages. Determination of the minimal bactericidal or fungicidal concentration against several microorganisms showed interesting activities towards Streptococcus pyogenes, Micrococcus sp., and **Candida** sp.

L67 ANSWER 5 OF 13 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 1999:665847 SCISEARCH
THE GENUINE ARTICLE: 229NC
TITLE: Concurrent resolution and oxidation of an allylic acetate and its utilization in the diastereocontrolled synthesis of some cyclopentanoid **monoterpenes**
AUTHOR: Nagata H; Ogasawara K (Reprint)
CORPORATE SOURCE: TOHOKU UNIV, INST PHARMACEUT, SENDAI, MIYAGI 9808578, JAPAN (Reprint); TOHOKU UNIV, INST PHARMACEUT, SENDAI, MIYAGI 9808578, JAPAN
COUNTRY OF AUTHOR: JAPAN
SOURCE: TETRAHEDRON LETTERS, (3 SEP 1999) Vol. 40, No. 36, pp. 6617-6620.
Publisher: PERGAMON-ELSEVIER SCIENCE LTD, THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, ENGLAND.
ISSN: 0040-4039.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS; LIFE
LANGUAGE: English
REFERENCE COUNT: 19
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Racemic endo-4-acetoxybicyclo[3.2.1]oct-2-ene furnishes enantiopure (+)-bicyclo[3.2.1]oct-3-en-2-one and its dihydro derivative leaving enantiopure (+)-endo-4-acetoxybicyclo[3.2.1]oct-2-ene in a phosphate buffer solution in the presence of a lipase (**Candida** antarctica) and palladium(II) chloride. Utilizing the products, a diastereocontrolled route to some cyclopentanoid **monoterpenes** has been established.

L67 ANSWER 6 OF 13 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:739042 CAPLUS
DOCUMENT NUMBER: 132:313401
TITLE: Chemical composition and biological activity of the essential oil of the fruit of Taxodium distichum L. Rich growing in Egypt
AUTHOR(S): El Tantawy, Mona E.; El Sakhawy, Fatma S.; El Sohly, Mahmoud A.; Ross, Samir A.

CORPORATE SOURCE: Plant Tissue Culture Department, National, Organization for Drug Control and Research, Cairo, Egypt
SOURCE: Journal of Essential Oil Research (1999), 11(3), 386-392
CODEN: JEOREG; ISSN: 1041-2905
PUBLISHER: Allured Publishing Corp.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The chem. compn. of the essential oil of the fruit of T. distichum growing in Egypt was studied and reported for the first time. The oil obtained by steam distn. (0.8%) and examd. by GC/MS anal. Forty-six components were identified and constituted 99.4% of the total compn. of the oil. The principal component was .alpha.-pinene (87.3%). The LD50 of the oil was 1060 mg/kg. The oil had significant anti-inflammatory and antispasmodic activity. It also exhibited a strong antibacterial effect against Escherichia coli, Proteus mirabilis, and Staphylococcus aureus, and significant antifungal activity against **Candida** albicans.
REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 7 OF 13 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:733316 CAPLUS
DOCUMENT NUMBER: 132:93482
TITLE: The role of structure and molecular properties of terpenoids in determining their antimicrobial activity
AUTHOR(S): Griffin, Shane G.; Wyllie, S. Grant; Markham, Julie L.; Leach, David N.
CORPORATE SOURCE: Centre For Biostructural and Biomolecular Research, University of Western Sydney Hawkesbury, Richmond, 2753, Australia
SOURCE: Flavour and Fragrance Journal (1999), 14(5), 322-332
CODEN: FFJOED; ISSN: 0882-5734
PUBLISHER: John Wiley & Sons Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The min. inhibitory concns. (MIC) of 60 terpenoids against Pseudomonas aeruginosa, Escherichia coli, Staphylococcus aureus and **Candida** albicans have been detd. Hierarchical cluster anal. was used to group the compds. into five groups according to their activity patterns against the four microorganisms. K-Means cluster anal. was then used to confirm these groupings and to show the differences in the activity patterns of the groups. Ten mol. properties of the terpenoids, either calcd. via mol. modeling or detd. by direct measurement, were then used as variables in a forward stepwise discriminant anal. to identify which variables discriminated between groups. Low water soly. of Group IV compds., mainly hydrocarbons and acetates, was found to be assocd. with their relative inactivity. The remaining groups, all contg. oxygenated terpenoids, showed characteristic but distinct activity patterns towards the four test organisms. Hydrogen bonding parameters were found to be assocd. with antimicrobial activity in all cases. Activity against Gram-neg. E. coli and P. aeruginosa was assocd. with a combination of a hydrogen bonding and size parameters. This was not found to be the case for the Gram-pos. S. aureus or the yeast C. albicans.
REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 8 OF 13 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 3
ACCESSION NUMBER: 1999:197079 CAPLUS
DOCUMENT NUMBER: 130:227620
TITLE: Composition and antimicrobial activity of the essential oil of Peumus boldus leaves
AUTHOR(S): Vila, Roser; Valenzuela, Lucy; Bello, Helia; Canigueral, Salvador; Montes, Marco; Adzet, Tomas
CORPORATE SOURCE: Unitat Farmacologia Farmacognosia, Facultat Farmacia, Universitat Barcelona, Barcelona, E-08028, Spain
SOURCE: Planta Medica (1999), 65(2), 178-179
CODEN: PLMEAA; ISSN: 0032-0943
PUBLISHER: Georg Thieme Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The compn. and the antimicrobial activity of the essential oil from the leaves of Peumus boldus is investigated. Analyses of the oil obtained by hydrodistn. were carried out by GC and GC-MS using columns of 2 different stationary phases. Fractionation of the essential oil by column chromatog. on silica gel was performed to improve identification of some constituents. More than 90% of the total oil (46 components) was identified, major constituents being **monoterpenes** (90.5%), among which **limonene** (17.0%), p-cymene (13.6%), 1,8-cineole (11.8%), and .beta.-phellandrene (8.4%) reached the highest percentages. Detn. of the minimal bactericidal or fungicidal concn. against several microorganisms showed interesting activities towards Streptococcus pyogenes, Micrococcus sp., and **Candida** sp. Bicyclogermacrene.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 9 OF 13 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1998:262690 CAPLUS
DOCUMENT NUMBER: 129:38659
TITLE: Antimicrobial activity of essential oils from Zieria
AUTHOR(S): Griffin, Shane G.; Leach, David N.; Markham, Julie; Johnstone, Richard
CORPORATE SOURCE: Centre for Biostructural and Biomolecular Research, University of Western Sydney Hawkesbury, Richmond, 2753, Australia
SOURCE: Journal of Essential Oil Research (1998), 10(2), 165-174
CODEN: JEOREG; ISSN: 1041-2905
PUBLISHER: Allured Publishing Corp.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Essential oils, extd. from species of the genus Zieria using cold methanol extn., were used to divide the Zieria species into eight groups based on the chem. compns. of their oils using hierarchical cluster anal. The major components of most Zieria oils were oxygenated terpenes or other related compds. including car-3-en-2-one, chrysanthenone, eucarvone, Me eugenol, elemicin and safrole. In several of the Zieria oils the major oxygenated **monoterpene** made up between 50-60% of the oil compn. Measurements of min. inhibitory concn., using an agar diln. method and Escherichia coli, Staphylococcus aureus, Pseudomonas aeruginosa and **Candida** albicans as test organisms, have demonstrated that essential oils from Zieria exhibit antimicrobial activity. Several of the major oxygenated compds. were tested individually and found, in most cases, to be comparable in bioactivity to the oils in which they occurred.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 10 OF 13 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1998:249117 CAPLUS
DOCUMENT NUMBER: 128:274935
TITLE: Composition and antimicrobial activity of the essential oil of Murraya exotica L
AUTHOR(S): El-Sakhawy, F. S.; El-Tantawy, M. E.; Ross, S. A.; El-Sohly, M. A.
CORPORATE SOURCE: Fac. Pharm., Cairo Univ., Egypt
SOURCE: Flavour and Fragrance Journal (1998), 13(1), 59-62
CODEN: FFJOED; ISSN: 0882-5734
PUBLISHER: John Wiley & Sons Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The essential oils of fresh flowers, leaves and fruits of M. exotica, cultivated in Egypt, were analyzed by GC-MS. Forty-four components were identified in the oils. The **monoterpene** hydrocarbon .alpha.-pinene was the major constituents in all cases. The oils exhibited strong antifungal activity against **Candida** albicans and showed a modest antibacterial activity against Escherichia coli, Pseudomonas aeruginosa, Staphylococcus aureus and Sarcina lutea.

REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 11 OF 13 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1997:194072 CAPLUS

DOCUMENT NUMBER: 126:242692
TITLE: Composition and antimicrobial activity of the essential oil of the fruits of Schinus dependens Ort.
AUTHOR(S): El-Sakhawy, F.S.
CORPORATE SOURCE: Department of Pharmacognosy, Faculty of Pharmacy, Cairo University, Kasr El-Ainy, Cairo, 11562, Egypt
SOURCE: Al-Azhar Journal of Pharmaceutical Sciences (1996), 17, 159-170
CODEN: AAJPFT; ISSN: 1110-1644
PUBLISHER: Al-Azhar University, Faculty of Pharmacy
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The essential oil of ripe fruits of Schinus dependens Ort. was obtained by steam-distn. (2.1%). The oil was analyzed by gas chromatog.-mass spectroscopy (GC-MS) technique. Twenty-four components representing 97.91% of the total oil compn. (43 components) were identified. **Monoterpene** hydrocarbons were the most abundant constituents of the oil (74.78%). Among these, **limonene** (29.71%) constituted the highest percentage followed by .alpha.-phellandrene (21%). In addn. significant amts. of p-cymene, .beta.-pinene, .alpha.-pinene, and myrcene were present. The oil showed pronounced antimicrobial activity against Bacillus subtilis, Staphylococcus aureus, Escherichia coli, Pseudomonas aeruginosa, and Klebsiella pneumonia, the oil also exhibited a significant activity against **Candida** albicans.

L67 ANSWER 12 OF 13 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 92179550 EMBASE
DOCUMENT NUMBER: 1992179550
TITLE: Antimicrobial agents from Licaria puchuri-major and their synergistic effect with polygodial.
AUTHOR: Himejima M.; Kubo I.
CORPORATE SOURCE: Entomology and Parasitology Division, College of Natural Resources, University of California,Berkeley, CA 94720, United States
SOURCE: Journal of Natural Products (Lloydia), (1992) 55/5 (620-625).
ISSN: 0163-3864 CODEN: JNPRDF
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 004 Microbiology
030 Pharmacology
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English

AB The resistance of the seeds of Licaria puchuri-major (Lauraceae) to decomposition in nature seems to be due largely to chemical defense, since its n-hexane extract contains antimicrobial principles in quantity, with a broad antimicrobial spectrum. In order to identify the active principles, the n-hexane extract was steam-distilled to yield a distillate and a residue. Subsequent bioassay indicated that the distillate retained the original broad antimicrobial activity, while the residue exhibited almost no activity. Gc-ms analysis showed that the distillate contained four phenolic compounds, seven **monoterpenes**, and one sesquiterpene. In contrast, the residue contained, almost exclusively, lauric acid. In the detailed antimicrobial assay with the pure compounds identified, most of them showed broad, but moderate, antimicrobial activity. Some of the components identified in the distillate were combined with polygodial [1] in order to enhance their antifungal activity. Unexpectedly, while polygodial did not synergize the antifungal activity of any of the compounds tested, the antifungal activity of polygodial was significantly increased when combined with aromatic substances such as anethole, safrole, or methyleugenol.

L67 ANSWER 13 OF 13 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1987:474282 CAPLUS
DOCUMENT NUMBER: 107:74282
TITLE: Composition and antimicrobial activity of the essential oil from some Zanthoxylum L. species introduced into the Apsheron Peninsula
AUTHOR(S): Mishurova, S. S.; Abbasov, R. M.; Malinovskaya, T. A.

CORPORATE SOURCE: USSR
SOURCE: Izvestiya Akademii Nauk Azerbaidzhanskoi SSR, Seriya Biologicheskikh Nauk (1986), (5), 18-25
CODEN: IABLAQ; ISSN: 0132-6112
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB From fruit-set to ripening, oil increased from 3.52 to 7.50 dry-wt.% in the fruit, and from 0.33 to 0.41 in the foliage, of Z. simulans. The oils had 20 and 21 constituents, resp., and comprised 13.4 and 24.2% high-boiling fraction, resp. Cineole and **limonene** were the main constituents of both oils. Nine constituents, were identified in fruit and foliage oils. Fruit-oil cineole and **limonene** were max. during fruit-set and ripening, resp. Z. alatum Contained no oil in the foliage, and the oil increased from 1.68 to 3.47% in the fruit from fruit-set to ripening. The oil from ripe fruit contained 16 constituents, the main ones being cineole (47.3%) and **limonene** (26.1%). Thujene, .alpha.- and .beta.-pinene, camphene, sabinene, .beta.-phellandrene, **limonene**, cineole, and p-cymol were the main **monoterpenes** in the ripe fruit of both species. The oil of Z. simulans fruit was more effective against Escherichia coli than against **Candida** albicans, whereas Staphylococcus aureus and Pseudomonas aeruginosa were more tolerant than Serratia marcescens. The oil also had sporicidal activity against E. coli.

=> s hansenula and monoterpene
TOTAL FOR ALL FILES
L74 10 HANSENULA AND MONOTERPENE

=> dup rem
ENTER L# LIST OR (END):174
PROCESSING COMPLETED FOR L74
L75 4 DUP REM L74 (6 DUPLICATES REMOVED)

=> d 1-4 ibib abs

L75 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 1
ACCESSION NUMBER: 2000:511288 CAPLUS
DOCUMENT NUMBER: 133:251444
TITLE: Inhibition of food spoilage yeasts and aflatoxigenic moulds by **monoterpenes** of the spice Aframomum danielli
AUTHOR(S): Adegoke, G. O.; Iwahashi, H.; Komatsu, Y.; Obuchi, K.; Iwahashi, Y.
CORPORATE SOURCE: National Institute of Bioscience and Human Technology, Tsukuba, 305, Japan
SOURCE: Flavour and Fragrance Journal (2000), 15(3), 147-150
CODEN: FFJOED; ISSN: 0882-5734
PUBLISHER: John Wiley & Sons Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Essential oil **monoterpenes** (.alpha.-terpinene, (+)-limonene, .alpha.-pinene, 1,8-cineole) of the spice Aframomum danielli were tested for in vitro antifungal activities against some food spoilage yeasts (Torulopsis candida, Candida tropicalis, Kluyveromyces thermotolerans, K. fragilis, **Hansenula** anomala and Pichia pastoris) and mycotoxigenic molds (Aspergillus flavus, A. parasiticus). With .alpha.-terpinene, the mean min. inhibitory concns. (MICs) for T. candida, K. fragilis, K. thermotolerans and C. tropicalis were found to be 4.9, 39, 78 and 156 .mu.g/mL, resp. With (+)-limonene, the mean MICs for T. candida, K. fragilis, K. thermotolerans and C. tropicalis were 39, 312, 39 and 312 .mu.g/mL, resp. The minimal fungal concns. (MFCs) of the **monoterpenes** varied from 39 to 1250 .mu.g/mL for the food spoilage yeasts examd. Within 60 min, .alpha.-terpinene (312 .mu.g/mL) reduced the population of C. tropicalis and H. anomala from 105 to 103 cells/mL. The MIC of (+)-limonene for A. parasiticus was 78 .mu.g/mL. As revealed by NMR, both .alpha.-terpinene and (+)-limonene caused membrane injury of C. tropicalis cells.

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L75 ANSWER 2 OF 4 LIFESCI COPYRIGHT 2004 CSA on STN
ACCESSION NUMBER: 94:98193 LIFESCI
TITLE: Microbial reduction of carvone and citral, two alpha , beta -unsaturated carbonyl **monoterpenes**
AUTHOR: El-Sharkawy, S.H.; Saad, H.-El-Rady A.
CORPORATE SOURCE: Univ. Mansoura, Fac. Pharma., Dep. Pharmocognosy, Mansoura, Egypt 35516
SOURCE: ASIA - PAC. J. MOL. BIOL. BIOTECHNOL., (1994) vol. 2, no. 1, pp. 33-40.
ISSN: 0128-7451.
DOCUMENT TYPE: Journal
FILE SEGMENT: K; A; W2
LANGUAGE: English
SUMMARY LANGUAGE: English
AB R-(-)-Carvone has been transformed by **Hansenula** anomale ATCC 20144 into three pure metabolites, dihydrocarveol, 1, 2R, 4R, 7R(+)-2,7-Oxidomenthan-8-ol, 2, and p-menth-8-en-3-ol, 3, in 19.2%, 25%, and 22.5% yield, respectively. Saccharomyces cerevisiae UI-Sacch converted citral into two metabolites, 3,7-dimethyl-2,6-octadien-1-ol, 4, and 3,7-dimethyl-6-octene-1-ol, 5, in 10% and 54% yield, respectively. Three types of reactions were observed namely, epoxidation and hydration of the double bond as well as reduction of carbonyl. The identity of the isolated metabolites was established using IR, MS, as well as both super(1)H- and super(13)C-NMR (1D- and 2D) spectroscopy.

L75 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 2
ACCESSION NUMBER: 1988:128206 CAPLUS
DOCUMENT NUMBER: 108:128206
TITLE: Oxygenated **monoterpenes** produced by yeasts, isolated from Ips typographus (Coleoptera: Scolytidae) and grown in phloem medium
AUTHOR(S): Leufven, Anders; Bergstroem, Gunnar; Falsen, Enevold
CORPORATE SOURCE: Dep. Chem. Ecol., Univ. Goeteborg, Goeteborg, 400 33, Swed.
SOURCE: Journal of Chemical Ecology (1988), 14(1), 353-62
CODEN: JCECD8; ISSN: 0098-0331
DOCUMENT TYPE: Journal
LANGUAGE: English
AB When yeasts assocd. with I. typographus beetles were grown in an aq. phloem medium for 2 days, the main oxygenated **monoterpenes** produced were .alpha.-terpineol and borneol. Terpinene-4-ol, myrtenol, and trans-pinocarveol were also found but in lesser amts. Of the 6 strains used in this study, **Hansenula** capsulata and Candida nitratophila produced the largest amts. of oxygenated **monoterpenes** . Addn. of .alpha.-pinene to the phloem medium generally reduced the amts. of oxygenated **monoterpenes**, probably because this substance is toxic to all tested yeast species. Candida diddensii Strain seemed to be particularly sensitive to .alpha.-pinene. None of the yeast strains produced cis-verbenol, trans-verbenol, or verbenone from the medium or from added .alpha.-pinene.

L75 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1987:136935 CAPLUS
DOCUMENT NUMBER: 106:136935
TITLE: Enzymic way to free bound aroma substances in wine
AUTHOR(S): Grossmann, M.; Rapp, A.; Rieth, W.
CORPORATE SOURCE: Inst. Lebensmittelchem., Univ. Karlsruhe, Karlsruhe, Fed. Rep. Ger.
SOURCE: Deutsche Lebensmittel-Rundschau (1987), 83(1), 7-12
CODEN: DLRUAJ; ISSN: 0012-0413
DOCUMENT TYPE: Journal
LANGUAGE: German
AB A yeast identified as **Hansenula** that produced .beta.-glucosidase [9001-22-3] was isolated from a fermented must. The yeast or its cell-free ext. increased the concn. of free **monoterpene** alcs. when added to must or wine by degrdn. of their glycosides. The max. increase of free **monoterpene** alcs. occurred by adding the free enzyme to the must just as alc. fermn. was ending.

=> s pichia and monoterpene

TOTAL FOR ALL FILES
L82 9 PICHIA AND MONOTERPENE

=> dup rem l82
PROCESSING COMPLETED FOR L82
L83 5 DUP REM L82 (4 DUPLICATES REMOVED)

=> d ibib abs 1-5

L83 ANSWER 1 OF 5 MEDLINE on STN
ACCESSION NUMBER: 2001531319 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11577744
TITLE: A new double coupling system: synthesis of citronellyl acetate via transacetylation to citronellol from acetyl coenzyme A produced from glucose and free fatty acids.
AUTHOR: Oda S; Ohta H
CORPORATE SOURCE: Technical Research Laboratory, Kansai Paint Co., Ltd., Hiratsuka, Kanagawa, Japan.. odas@als.kansai.co.jp
SOURCE: Bioscience, biotechnology, and biochemistry, (2001 Aug) 65 (8) 1917-9.
Journal code: 9205717. ISSN: 0916-8451.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200203
ENTRY DATE: Entered STN: 20011002
Last Updated on STN: 20020308
Entered Medline: 20020307
AB A double coupling system, which couples metabolism of glucose and transacetylation, is a unique procedure for the production of acetic esters. In the novel coupling system described in this article, acetyl coenzyme A (acetyl-CoA) was supplied via metabolism of both glucose and exogenous saturated fatty acids. While short and middle chain fatty acids having C4-8 were very biotoxic, myristic acid (C14) was effectively used as a source of acetyl-CoA.

L83 ANSWER 2 OF 5 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 2000:843531 SCISEARCH
THE GENUINE ARTICLE: 370AT
TITLE: Purification and characterization of an alpha-L-rhamnosidase from **Pichia** angusta X349
AUTHOR: Yanai T; Sato M (Reprint)
CORPORATE SOURCE: MERCIAN CORP, WINE & SPIRITS RES INST, 9-1, JOHNAN 4 CHOME, FUJISAWA, KANAGAWA 251005, JAPAN (Reprint); MERCIAN CORP, WINE & SPIRITS RES INST, FUJISAWA, KANAGAWA 251005, JAPAN
COUNTRY OF AUTHOR: JAPAN
SOURCE: BIOSCIENCE BIOTECHNOLOGY AND BIOCHEMISTRY, (OCT 2000) Vol. 64, No. 10, pp. 2179-2185.
Publisher: JAPAN SOC BIOSCI BIOTECHN AGROCHEM, JAPAN ACAD SOC CTR BLDG, 2-4-6 YAYOI BUNKYO-KU, TOKYO 113, JAPAN.
ISSN: 0916-8451.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE; AGRI
LANGUAGE: English
REFERENCE COUNT: 22
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB An intracellular alpha -L-rhamnosidase from **Pichia** angusta X349 was purified to homogeneity through four chromatographic steps. The alpha -L-rhamnosidase appeared to be a monomeric protein with a molecular mass of 90 kDa. The enzyme had an isoelectric point at 4.9, and was optimally active at pH 6.0 and at around 40 degreesC. The Ki for L-rhamnose inhibition was 25 mM. The enzyme was inhibited by Cu2+, Hg2+, and p-chloromercuribenzoate. The alpha -L-rhamnosidase was highly specific for alpha -L-rhamnopyranoside and liberated rhamnose from naringin, rutin, hesperidin, and 3-quercitrin. The alpha -L-rhamnosidase was active at the ethanol concentrations of wine. It efficiently released monoterpenols, such as linalool and geraniol, from an aroma precursor extracted from Muscat grape juice.

L83 ANSWER 3 OF 5 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 2000:511302 SCISEARCH
THE GENUINE ARTICLE: 329RZ
TITLE: Purification and characterization of a novel alpha-L-arabinofuranosidase from **Pichia** capsulata X91
AUTHOR: Yanai T; Sato M (Reprint)
CORPORATE SOURCE: MERCIAN CORP, WINE & SPIRITS RES INST, 9-1 JOHNAN 4-CHOME, FUJISAWA, KANAGAWA 251005, JAPAN (Reprint); MERCIAN CORP, WINE & SPIRITS RES INST, FUJISAWA, KANAGAWA 251005, JAPAN
COUNTRY OF AUTHOR: JAPAN
SOURCE: BIOSCIENCE BIOTECHNOLOGY AND BIOCHEMISTRY, (JUN 2000) Vol. 64, No. 6, pp. 1181-1188.
Publisher: JAPAN SOC BIOSCI BIOTECHN AGROCHEM, JAPAN ACAD SOC CTR BLDG, 2-4-6 YAYOI BUNKYO-KU, TOKYO 113, JAPAN.
ISSN: 0916-8451.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE; AGRI
LANGUAGE: English
REFERENCE COUNT: 26
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB An intracellular alpha-L-arabinofuranosidase from **Pichia** capsulata X91 was purified and characterized. The enzyme was purified to homogeneity from a cell-free extract by ammonium sulfate treatment, Concanavalin A-Sepharose, ion-exchange chromatography with DEAE Bio-Gel A agarose, arabinose-Sepharose dB affinity chromatography, and hydroxyapatite column chromatography. The apparent molecular mass of the enzyme was estimated to be 250 kDa by native-PAGE. The enzyme molecule was suggested to be a tetramer with a subunit molecular mass of 72 kDa by SDS-PAGE. The enzyme had an isoelectric point at 5.1, and was most active at pH 6.0 and at around 50 degrees C. The alpha-L-arabinofuranosidase was active at ethanol concentrations of wine. The enzyme was inhibited by Cu2+, Hg2+, and p-chloromercuribenzoate. The enzyme hydrolyzed beet arabinan and arabinogalactan, and efficiently released monoterpenols from an aroma precursor extracted from Muscat grape juice. A considerable amount of monoterpenols was produced in the Muscat wine coupled with the enzyme addition.

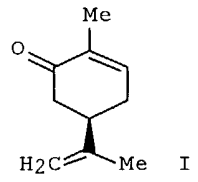
L83 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 1
ACCESSION NUMBER: 2000:511288 CAPLUS
DOCUMENT NUMBER: 133:251444
TITLE: Inhibition of food spoilage yeasts and aflatoxigenic moulds by **monoterpenes** of the spice Aframomum danielli
AUTHOR(S): Adegoke, G. O.; Iwahashi, H.; Komatsu, Y.; Obuchi, K.; Iwahashi, Y.
CORPORATE SOURCE: National Institute of Bioscience and Human Technology, Tsukuba, 305, Japan
SOURCE: Flavour and Fragrance Journal (2000), 15(3), 147-150
CODEN: FFJOED; ISSN: 0882-5734
PUBLISHER: John Wiley & Sons Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Essential oil **monoterpenes** (.alpha.-terpinene, (+)-limonene, .alpha.-pinene, 1,8-cineole) of the spice Aframomum danielli were tested for in vitro antifungal activities against some food spoilage yeasts (Torulopsis candida, Candida tropicalis, Kluyveromyces thermotolerans, K. fragilis, Hansenula anomala and **Pichia** pastoris) and mycotoxigenic molds (Aspergillus flavus, A. parasiticus). With .alpha.-terpinene, the mean min. inhibitory concns. (MICs) for T. candida, K. fragilis, K. thermotolerans and C. tropicalis were found to be 4.9, 39, 78 and 156 .mu.g/mL, resp. With (+)-limonene, the mean MICs for T. candida, K. fragilis, K. thermotolerans and C. tropicalis were 39, 312, 39 and 312 .mu.g/mL, resp. The minimal fungal concns. (MFCs) of the **monoterpenes** varied from 39 to 1250 .mu.g/mL for the food spoilage yeasts examd. Within 60 min, .alpha.-terpinene (312 .mu.g/mL) reduced the population of C. tropicalis and H. anomala from 105 to 103 cells/mL. The MIC of (+)-limonene for A. parasiticus was 78 .mu.g/mL. As revealed by NMR, both .alpha.-terpinene and (+)-limonene caused membrane injury of C. tropicalis cells.

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L83 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1998:533853 CAPLUS
DOCUMENT NUMBER: 129:259364
TITLE: Biotransformation of monoterpenoid ketones by yeasts and yeast-like fungi
AUTHOR(S): van Dyk, M. S.; van Rensburg, E.; Rensburg, I. P. B.; Moleleki, N.
CORPORATE SOURCE: Department of Microbiology and Biochemistry, University of the Orange Free State, Bloemfontein, S. Afr.
SOURCE: Journal of Molecular Catalysis B: Enzymatic (1998), 5(1-4), 149-154
CODEN: JMCEF8; ISSN: 1381-1177
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

AB A large no. of yeasts were screened for the biotransformation of (-)-piperitone, (+)- and (-)-carvone (I), (-)-menthone, (+)-pulegone and (-)-verbenone. A relatively small no. of yeasts gave hydroxylation products of (-)-piperitone. Products obtained from (-)-piperitone were 7-hydroxy-piperitone, cis-6-hydroxy-piperitone, trans-6-hydroxy-piperitone, and 2-isopropyl-5-methyl-hydroquinone. Yields for the hydroxylation reactions varied between 8% and 60%, corresponding to product concns. of 0.04 to 0.3 g/L. Not one of the yeasts tested reduced (-)-piperitone. In contrast, almost all the yeasts tested gave redn. of carvone, although the enzyme activity varied. Redn. of I was often much faster than redn. of (+)-carvone. Some yeasts only reduced the C:C double bond to yield the dihydrocarvone isomers with the stereochem. at C-1 always R, while others also reduced the ketone to give the dihydrocarveols with the stereochem. at C-2 always S for I, but sometimes S and sometimes R for (+)-carvone. In the case of I, yields of .ltoreq.90% were obtained within 2 h. Only 1 organism, a Hormonema isolate (UOFS Y-0067), quant. reduced (-)-menthone and (+)-pulegone to (+)-neomenthol. This same organism reduced (4S)-isopiperitenone to (3R,4S)-isopiperitenol, a precursor of (-)-menthol.
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> s torulopsis and monoterpene
TOTAL FOR ALL FILES
L90 5 TORULOPSIS AND MONOTERPENE

=> dup rem l90
PROCESSING COMPLETED FOR L90
L91 1 DUP REM L90 (4 DUPLICATES REMOVED)

=> d ibib abs

L91 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 1
ACCESSION NUMBER: 2000:511288 CAPLUS
DOCUMENT NUMBER: 133:251444
TITLE: Inhibition of food spoilage yeasts and aflatoxigenic moulds by **monoterpenes** of the spice

Aframomum danielli
AUTHOR(S): Adegoke, G. O.; Iwahashi, H.; Komatsu, Y.; Obuchi, K.; Iwahashi, Y.
CORPORATE SOURCE: National Institute of Bioscience and Human Technology, Tsukuba, 305, Japan
SOURCE: Flavour and Fragrance Journal (2000), 15(3), 147-150
CODEN: FFJOED; ISSN: 0882-5734
PUBLISHER: John Wiley & Sons Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Essential oil **monoterpenes** (.alpha.-terpinene, (+)-limonene, .alpha.-pinene, 1,8-cineole) of the spice Aframomum danielli were tested for in vitro antifungal activities against some food spoilage yeasts (**Torulopsis** candida, Candida tropicalis, Kluyveromyces thermotolerans, K. fragilis, Hansenula anomala and Pichia pastoris) and mycotoxigenic molds (Aspergillus flavus, A. parasiticus). With .alpha.-terpinene, the mean min. inhibitory concns. (MICs) for T. candida, K. fragilis, K. thermotolerans and C. tropicalis were found to be 4.9, 39, 78 and 156 .mu.g/mL, resp. With (+)-limonene, the mean MICs for T. candida, K. fragilis, K. thermotolerans and C. tropicalis were 39, 312, 39 and 312 .mu.g/mL, resp. The minimal fungal concns. (MFCs) of the **monoterpenes** varied from 39 to 1250 .mu.g/mL for the food spoilage yeasts examd. Within 60 min, .alpha.-terpinene (312 .mu.g/mL) reduced the population of C. tropicalis and H. anomala from 105 to 103 cells/mL. The MIC of (+)-limonene for A. parasiticus was 78 .mu.g/mL. As revealed by NMR, both .alpha.-terpinene and (+)-limonene caused membrane injury of C. tropicalis cells.
REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> s rhodotorula and monoterpene
TOTAL FOR ALL FILES
L98 14 RHODOTORULA AND MONOTERPENE

=> dup rem l14
PROCESSING COMPLETED FOR L14
L99 1 DUP REM L14 (0 DUPLICATES REMOVED)

=> dup rem l98
PROCESSING COMPLETED FOR L98
L100 8 DUP REM L98 (6 DUPLICATES REMOVED)

=> d ibib abs 1-8

L100 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:992719 CAPLUS
DOCUMENT NUMBER: 140:326581
TITLE: Screening chemical composition and in vitro antioxidant and antimicrobial activities of the essential oils from Origanum syriacum L. Growing in Turkey
AUTHOR(S): Alma, Mehmet Hakki; Mavi, Ahmet; Yildirim, Ali; Digrak, Metin; Hirata, Toshifumi
CORPORATE SOURCE: Department of Industrial Engineering of Forestry, Faculty of Forestry, University of Kahramanmaras Sutcu Imam, Kahramanmaras, 46060, Turk.
SOURCE: Biological & Pharmaceutical Bulletin (2003), 26(12), 1725-1729
CODEN: BPBLEO; ISSN: 0918-6158
PUBLISHER: Pharmaceutical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
AB In the present study, essential oil from the leaves of Syrian oreganum [Origanum syriacum L. (Lauraceae)] grown in Turkish state forests of the Dortyol district, Turkey, was obtained by steam distn. The chem. compn. of oil was analyzed by GC and GC-MS, and was found to contain 49.02% **monoterpenes**, 36.60% oxygenated **monoterpenes**, and 12.59% sesquiterpenes. The major components are as follows: .gamma.-terpinene, carvacrol, p-cymene, and .beta.-caryophyllene. Subsequently, the reducing power, antioxidant and 2,2-diphenyl-1-picryl-hydrazyl (DPPH)

radical-scavenging activities of the essential oil were studied. The reducing power was compared with ascorbic acid, and the other activities were compared with 2,6-di-tert-butyl-4-Me phenol (BHT, butylated hydroxytoluene). The results showed that the activities were concn. dependent. The antioxidant activities of the oil were slightly lower than those of ascorbic acid or BHT, so the oil can be considered an effective natural antioxidant. Antimicrobial activities of the essential oil from the leaves of Origanum syriacum was also detd. on 16 microorganisms tested using the agar-disk diffusion method, and showed antimicrobial activity against 13 of these.

REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L100 ANSWER 2 OF 8 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 2003:737647 SCISEARCH
THE GENUINE ARTICLE: 712VH
TITLE: Biotransformation of (L)-citronellal to (L)-citronellol by free and immobilized **Rhodotorula** minuta
AUTHOR: Velankar H R (Reprint); Heble M R
CORPORATE SOURCE: Kelkar Educ Trusts Sci Res Ctr, Mithagar Rd, Bombay 400081, Maharashtra, India (Reprint); Kelkar Educ Trusts Sci Res Ctr, Bombay 400081, Maharashtra, India
COUNTRY OF AUTHOR: India
SOURCE: ELECTRONIC JOURNAL OF BIOTECHNOLOGY, (15 AUG 2003) Vol. 6, No. 2, pp. 90-103.
Publisher: UNIV CATOLICA DE VALPARAISO, AV BRASIL 2950, PO BOX 4059, VALPARAISO, CHILE.
ISSN: 0717-3458.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 35
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB This paper reports biotransformation of (L)-citronellal to (L)-citronellol using free and immobilized cells of **Rhodotorula** minuta. The culture preparation variables such as pH, temperature and incubation period for obtaining maximum cell growth of R. minuta were optimized. The optimized culture conditions for free and immobilized cells of R. minuta. have been compared for (L)-citronellal biotransformation. The various factors such as the optimum substrate concentration and the time of substrate addition at varying cell concentrations during the growth of yeast culture were also studied. Highest (L)-citronellol concentration of 3.5 gl(-1) was obtained with free cell catalyzed biotransformation at pH 5.5, 27degreesC and 150 rpm after 8 hrs using initial (L)-citronellal concentration of 4.47 gl(-1). Alginate immobilized R. minuta cells could optimally biotransform similar substrate concentration to 3.3 gl(-1) (L)-citronellol at pH 6, 27degreesC and 150 rpm after 8 hrs. Immobilized cells could be reused twice after the first run and the product concentrations of 2.63 gl(-1) and 1.52 gl(-1) were obtained during the first and the second reuse.

L100 ANSWER 3 OF 8 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 2002409698 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12164281
TITLE: Antimicrobial properties of the essential oil of Artemisia asiatica Nakai.
AUTHOR: Kalemba D; Kusewicz D; Swiader K
CORPORATE SOURCE: Institute of General Food Chemistry, Technical University, Lodz, Poland.
SOURCE: Phytotherapy research : PTR, (2002 May) 16 (3) 288-91.
Journal code: 8904486. ISSN: 0951-418X.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200301
ENTRY DATE: Entered STN: 20020808
Last Updated on STN: 20030108
Entered Medline: 20030107

AB The antibacterial and antifungal activity of the essential oil of Artemisia asiatica Nakai, its main constituents: 1,8-cineole and selin-11-en-4alpha-ol and **monoterpene** alcohols fraction were

determined against Bacillus subtilis, Staphylococcus aureus, Escherichia coli, Pseudomonas aeruginosa, Candida albicans, **Rhodotorula** rubra and Aspergillus fumigatus. The oil exhibited a good inhibitory activity against bacteria and fungi. The **monoterpene** alcohols fraction showed the highest antibacterial activity.

L100 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 2
ACCESSION NUMBER: 1999:77985 CAPLUS
DOCUMENT NUMBER: 130:293060
TITLE: Epoxide hydrolases from yeasts and other sources: versatile tools in biocatalysis
AUTHOR(S): Weijers, Carel A. G. M.; de Bont, Jan A. M.
CORPORATE SOURCE: Department of Food Technology and Nutritional Sciences, Division of Industrial Microbiology, Wageningen Agricultural University, Wageningen, 6700 EV, Neth.
SOURCE: Journal of Molecular Catalysis B: Enzymatic (1999), 6(3), 199-214
CODEN: JMCEF8; ISSN: 1381-1177
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review with 73 refs. Major characteristics, substrate specificities and enantioselectivities of epoxide hydrolases from various sources are described. Epoxide hydrolase activity in yeasts is discussed in more detail and is compared with activities in other microorganisms. Constitutively produced bacterial epoxide hydrolases are highly enantioselective in the hydrolysis of 2,2- and 2,3-disubstituted epoxides. A novel bacterial limonene-1,2-epoxide hydrolase, induced by growth on **monoterpenes**, showed high activities and selectivities in the hydrolysis of several substituted alicyclic epoxides. Constitutively produced epoxide hydrolases are found in eukaryotic microorganisms. Enzymes from filamentous fungi are useful biocatalysts in the resoln. of aryl- and substituted alicyclic epoxides. Yeast epoxide hydrolase activity has been demonstrated for the enantioselective hydrolysis of various aryl-, alicyclic- and aliph. epoxides by a strain of **Rhodotorula** glutinis. The yeast enzyme, moreover, is capable of asym. hydrolysis of meso epoxides and performs highly enantioselective resoln. of unbranched aliph. 1,2-epoxides. Screening for other yeast epoxide hydrolases shows that high enantioselectivity is restricted to a few basidiomycetes genera only. Resoln. of very high substrate concns. is possible by using selected basidiomycetes yeast strains.
REFERENCE COUNT: 73 THERE ARE 73 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L100 ANSWER 5 OF 8 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1999:153617 BIOSIS
DOCUMENT NUMBER: PREV199900153617
TITLE: Epoxide hydrolases from yeast and other sources: versatile tools in biocatalysis.
AUTHOR(S): Weijers, Carel A. G. M. [Reprint author]; De Bont, Jan A. M.
CORPORATE SOURCE: Div. Ind. Microbiol., Dep. Food Technol. Nutr. Sci., Wageningen Agric. Univ., P.O. Box 8129, 6700 EV Wageningen, Netherlands
SOURCE: Journal of Molecular Catalysis B Enzymatic, (March 11, 1998) Vol. 6, No. 3, pp. 199-214. print.
ISSN: 1381-1177.
DOCUMENT TYPE: Article
General Review; (Literature Review)
LANGUAGE: English
ENTRY DATE: Entered STN: 16 Apr 1999
Last Updated on STN: 16 Apr 1999
AB Major characteristics, substrate specificities and enantioselectivities of epoxide hydrolases from various sources are described. Epoxide hydrolase activity in yeasts is discussed in more detail and is compared with activities in other microorganisms. Constitutively produced bacterial epoxide hydrolases are highly enantioselective in the hydrolysis of 2,2- and 2,3-disubstituted epoxides. A novel bacterial limonene-1,2-epoxide hydrolase, induced by growth on **monoterpenes**, showed high activities and selectivities in the hydrolysis of several substituted

alicyclic epoxides. Constitutively produced epoxide hydrolases are found in eukaryotic microorganisms. Enzymes from filamentous fungi are useful biocatalysts in the resolution of aryl- and substituted alicyclic epoxides. Yeast epoxide hydrolase activity has been demonstrated for the enantioselective hydrolysis of various aryl-, alicyclic- and aliphatic epoxides by a strain of **Rhodotorula** glutinis. The yeast enzyme, moreover, is capable of asymmetric hydrolysis of meso epoxides and performs highly enantioselective resolution of unbranched aliphatic 1,2-epoxides. Screening for other yeast epoxide hydrolases shows that high enantioselectivity is restricted to a few basidiomycetes genera only. Resolution of very high substrate concentrations is possible by using selected basidiomycetes yeast strains.

L100 ANSWER 6 OF 8 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1986:353653 BIOSIS
DOCUMENT NUMBER: PREV198631058581; BR31:58581
TITLE: ELICITOR-STIMULATION OF **MONOTERPENE** INDOLE ALKALOID FORMATION IN SUSPENSION CULTURES OF CATHARANTHUS-ROSEUS.
AUTHOR(S): EILERT U [Reprint author]; DELUCA V; CONSTABEL F; KURZ W G W
CORPORATE SOURCE: NATL RES COUNCIL CAN, PLANT BIOTECHNOL INST, SASKATOON, SASK S7N 0W9
SOURCE: Plant Physiology (Rockville), (1986) Vol. 80, No. 4 SUPPL, pp. 132.
Meeting Info.: ANNUAL MEETING OF THE AMERICAN SOCIETY OF PLANT PHYSIOLOGISTS, BATON ROUGE, LA., USA, JUNE 8-12, 1986. PLANT PHYSIOL (BETHESDA).
CODEN: PLPHAY. ISSN: 0032-0889.
DOCUMENT TYPE: Conference; (Meeting)
FILE SEGMENT: BR
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 30 Aug 1986
Last Updated on STN: 30 Aug 1986

L100 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 3
ACCESSION NUMBER: 1987:99573 CAPLUS
DOCUMENT NUMBER: 106:99573
TITLE: Elicitor-stimulation of **monoterpene** indole alkaloid formation in suspension cultures of Catharanthus roseus
AUTHOR(S): Eilert, U.; Constabel, F.; Kurz, W. G. W.
CORPORATE SOURCE: Plant Biotechnol. Inst., Natl. Res. Counc. Canada, Saskatoon, SK, S7N 0W9, Can.
SOURCE: Journal of Plant Physiology (1986), 126(1), 11-22
CODEN: JPPHEY; ISSN: 0176-1617
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Upon treatment of 5 cell lines of C. roseus with homogenates of various fungi, as well as with chem. defined phytoalexin elicitors, all except one (non-alkaloid producing #916) responded with browning and accumulation of tryptamine within 6-24 h. Cells of line #615 responded by not only accumulating tryptamine, but also N-acetyl tryptamine, stroctosidine lactam, ajmalicine, tabersonine, lochnericine, and catharanthine. Based on amts. of alkaloids accumulated, cells of line #615 performed best when treatedwiyh homogenates of Alternaria zinnae, Pythium aphanidermatum, Verticillium dahliae, and **Rhodotorula** rubra. A Pythium homogenate concn. of 5% and a **Rhodotorula** homogenate concn. of 0.5% effected max. alkaloid yields, and, thus, were used in subsequent studies. These revealed a temporary increase of the level of alkaloids in cells and in their medium after 12-24 h of treatment. Ten-day-old subcultures responded better than younger and older ones. The elicitor stimulated accumulation of alkaloids and alkaloid compn. did not depend on the use of 1-B5 or alkaloid prodn. medium. A 5 L cell suspension of #615 grown in a 7.5 L bioreactor and treated with 5% Pythrium homogenate for 18 h was found to contain strictosidine lactam, ajmalicine, and catharanthine in concn. of 27, 10, and 10 .mu.g/g dry wt., resp.; the medium contained 42% of total ajmalicine.

L100 ANSWER 8 OF 8 LIFESCI COPYRIGHT 2004 CSA on STN
ACCESSION NUMBER: 86:48339 LIFESCI

TITLE: Elicitor-stimulation of **monoterpene** indole alkaloid formation in suspension cultures of Catharanthus roseus .
PLANT BIOTECHNOLOGY.

AUTHOR: Eilert, U.; Constabel, F.; Kurz, W.G.W.; Constabel, F. [editor]
CORPORATE SOURCE: Natl. Res. Counc. Canada, Plant Biotechnol. Inst., Saskatoon, Sask. S7N 0W9, Canada

SOURCE: J. PLANT PHYSIOL., (1986) pp. 11-22. Special issue..
DOCUMENT TYPE: Book
FILE SEGMENT: W
LANGUAGE: English
SUMMARY LANGUAGE: English

AB Upon treatment of 5 cell lines of Catharanthus roseus with homogenates of various fungi, as well as with chemically defined phytoalexin elicitors, all except one (non-alkaloid producing no. 916) responded with browing and accumulation of tryptamine within 6-24 h. Cells of line no. 615 responded with not only accumulating tryptamine, but also N-acetyl tryptamine, strictosidine lactam, ajmalicine, tabersonine, lochnericine, and catharanthine. Based on amounts of alkaloids accumulated, cells of line no 615 performed best when treated with homogenates of Alternaria zinnae, Pythium aphanidermatum, Verticillium dahliae , and **Rhodotorula** rubra . A Pythium homogenate concentration of 5% and a **Rhodotorula** homogenate concentration of 0.5% effected maximum alkaloid yields, and, thus, were used in subsequent studies. These revealed a temporary increase of the level of alkaloids in cells and in their medium after 12-24 h of treatment.

=> log y